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December 83

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SUBSCRIPTIONS:
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ARTICLES:
We would be happy to receive any kind of information on computers. Intended articles should not be more than 1000 words long.

Programs should, whenever possible, be computer printed, or on cassette.

If return of information is desired, then please say so and we shall do our utmost to return the copy in the condition it was received. (Please at all times, include your name and address, and if possible, your phone number, on all submissions). Cassette recordings will be returned.

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READERS' LETTERS

Dear Sir,

I am a subscriber to your magazine and enjoyed reading your first copy. On the whole (so far) I think it's great. (I am a 16-year-old high school student).

There is only one thing I don't like — the price. I realise you have only just begun, but I also get Bits & Bytes which is only $10 a year for 11 issues and is also fully on glossy paper. With some of this in colour, for less than you charge. Can you please explain why you are dear?

John McIntyre
AUCKLAND

P.S. I will continue to get your magazine. I like it.

The price remains constant, but quality, number of pages and advertising content are all on the increase with each issue. ED.

Dear Sirs,

The fact that I was one of those "more than a hundred" subscribers after your first edition, taking into account the paper quality and those execrable printouts, surely proves I'm fairly broadminded!

However, I have a couple of small grissles about edition #2.

1. Of the 3 programs for the VIC 20 2 are memory reconfiguration programs. (If everyone bought the Ram Electronics 32K expansion that I have they wouldn't need this sort of program).
2. I already have an identical program to that on Page 27 and it came from "VIC Computing" February 1983. If you are going to continue this magazine (and I hope you are as you have my $13) please be ethical and give recognition to rival publications if you are going to plagiarise their programs.

That said, may I congratulate you on your energy and courage in starting this type of journal in NZ. I hope you succeed as you deserve (see above). You may judge my confidence in you by the fact that you have my sub. and that which falls due this month to "that other one" will not be renewed. They have had their chance.

R. Keith Cook
INVERCARGILL

P.S. Do you know why, with the VIC Typewriter program, it is i m p o s s i b l e to force a space between some words?

All we can say is that we can only print what we receive. We can scrounge around to obtain a few programs here and there, but it basically comes back to you — the readers.

A printout's great if you can get hold of a printer. Even if you handwrite the program we'll gladly accept it. We'll even accept cassettes (buy a C5 or C10 and include a stamped, addressed envelope if you want it back).

And, you'll end up $10 richer.

We have little control over the originality of submitted materials. If we have seen it elsewhere, then it won't be printed, and they won't get their $10 either. Obviously, some will sneak through, but we hope people will only send us original programs. ED.

Dear Sir/Madam,

Enclosed find cheque for $13, being subscription payment for my son to your magazine "Computer Input."

Could you please advise me whether you have a folder available to hold the magazines thus eliminating misplacing issues.

Last of all I extend my congratulations to your staff on such an excellent, informative NZ published computer magazine.

Carol Irwin (Mrs)
WAINUIOMATA

Dear Editors,

I've been thinking about buying a computer. The Sega SC-3000. But unfortunately, my dad doesn't like the idea.

I'm sure I won't be the lucky 100th subscriber to win the computer.

Would you possibly know where I could get a good deal to buy a computer?

If it is possible, could you please send me a manual and some brochures?

I'm hoping that this will convince my dad to help me buy it, and for me to get to know about the computer (the Sega SC-3000).

Could you please tell me some things about Basic Two and Three, and which is the easiest.

Would you please, if possible, send me a program?

I know I've been asking a lot, you don't have to answer all of the things I've been asking.

By the way, the magazine is very interesting.

P.S.: Does the Sega SC-3000 take floppy disks?

Roderick Holland
GREEN BAY

Dear Computer Input,

Thank you for your excellent review on the Sega SC-3000 in the NOV '83 issue. You brought out all the power of it for such a low price too, to me. I am so intrigued I will most definately buy one. If you have more information on the Sega SC-3000 computer, such as what shops sell it, when, what cassette recorder is best, prices of software, etc. Could you please send it with my December issue?

(I am now subscribing to your magazine. Please don't send me NOV '83 issue, because I have bought it. Congratulations on this issue!)

OCT '83 issue had its bugs, but they were overcome in the NOV '83. Good on you I say for a NZ magazine that's tops.

Daniel Travers
WAIHI BEACH

Roderick & Daniel, I have grouped your answers together because by now you would have both received letters from Grandstand Liesure, the Sega people, answering tis.

These answers will then appear in our Sega SC-3000 column next month. ED.

Dear Sir,

I am the proud owner of a Commodore 64 which I have owned now for five months. At the moment, however, I am having trouble in disabling the STOP key. I have tried POKE788,52 but you can still stop program by pushing the RUN/STOP key and RESTORE keys. For some reason it also interferes with the TI$ function. Can you please tell me how I can solve this problem?

J.D.F. Morrison
PALMERSTON NORTH

Poke 788, 52 is the correct command, but this won't disable the restore key. Poke 788, 49 will reinstate the run stop key. The timing shouldn't be affected. ED.

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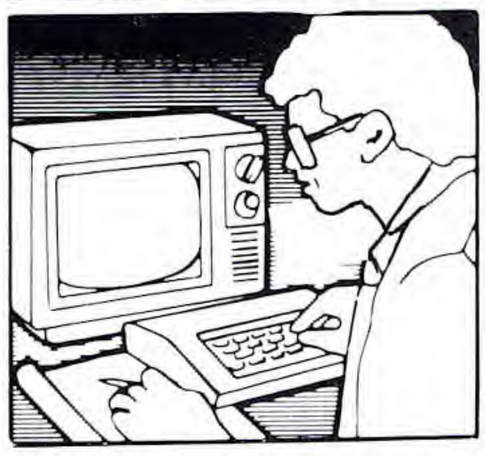

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EDITORS' PAGE

I would like to take this opportunity to welcome two new writers to **Computer Input**. The first to add strength to our team is Tom Cherrie. Tom will be based in London, England, and will be keeping us informed on what's happening in the UK and in Europe. His monthly column will be called "Overseas Input." Tom will be using his experience in the computer industry to advise us of changes, new discoveries and the like.

I would also like to especially welcome Olwen Williams. She is a very experienced computer programmer and is conversant in several computer languages. Olwen is the country's leading Colour Genie expert and to this end she will be writing a column called (you guessed it) "Genie Input." As a footnote, Olwen will be endeavouring to form the nucleus of a Colour Genie users' group. You will be able to read more on this in her column. Well, this is our third issue now, and we seem to be going from strength to strength. I am pleased to see so many people writing to give us encouragement and the programs being sent in are getting better and better. As a result of this grandstand leisure the Sega people have asked us to invite you, the reader, to submit programs that will run on the Sega SC-3000, the best of which will !!!!!!!! (only the future will tell). More on this in the competition page. So last, but not least, have a very enjoyable Christmas, a happy New Year and we will see you again in our January/February issue.

Regards,
ERIC McCALL

Welcome to the Christmas (December) issue of **Computer Input** magazine (yes, it's that time of year again!).

On behalf of the staff of **Computer Input** I would like, again, to thank all the people who have written (for and against), sent material, ideas and programs to us, and generally taken **Computer Input** closer to its goals. This is only our third issue, yet the support the NZ public and the people in the trade have given us, has not only completely overwhelmed us, but also shown that **Computer Input** has a definite place in the NZ home computer scene.

As we grow in the new year, keep sending us your material, for without it **Computer Input** is just another magazine full of advertisements. Keep those letters coming in, **Computer Input** is still young, and we only have you, the reader, to tell us if we've missed something or are starting to run off the rails.

At this point I'd like to announce the winner (100th subscriber) of the Sega SC-3000. Congratulations to **DARRYL GORE** of Matamata, you are now the proud owner of this fine computer (we're expecting lots of programs from you Darryl!). To all the rest of our subscribers, you were close! (What's a hundred between friends?) Don't give up, we're giving you guys a chance now (see competition page).

Finally, from all of us here to all of you out there — merry Christmas and a happy New Year, and we'll see you then.

ASHLEY NOBLE

WE HAVE A WINNER

Darryl Gore of Matamata is the lucky recipient of Computer Input's 100th subscriber's Sega SC-3000 Home Computer Competition.

Darryl's prize was presented by Mr Phil Kenyon of Grandstand Leisure (NZ) Ltd on the premises of their local distributor, Matamata Electronics.

SORD m5

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- Homework, budgetting and record-keeping can be done with the **FALC** information processor cartridge. Use single-key commands to enter, sort, search, calculate and graph any information you wish — without programming!
- Numerous games cartridges instantly provide arcade-style entertainment — even more fun with the optional joypads! Game tapes are tremendous value with a wide variety of full colour/sound games available — two per tape!
- As your needs grow, so will the **M5**. Other programming languages, games cartridges and tapes can be added, as can 32K of memory, an RS-232 interface, a fully-supported graphics printer and 160K microfloppy disk drives.
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Video Controller:	TMS9918A (256 x 192 resolution; 4 screen modes including 40 x 24 text mode; 32 User-definable sprites)	**B/W Video Output:**	For B/W TV or monitor
		Audio Output:	For optional speaker
		Cassette Recorder Interface:	2000 bits/second with remote control
Sound Generator:	SN76489A 3 channel, 6 octave with "enveloping" and noise generation	**Printer Interface:**	Centronics-type parallel
		Joypad Interfaces:	2 Joypads available separately
ROM:	8K monitor (up to 16K extra in cartridges)	**Cartridge Socket:**	For plug-in software (ROM & RAM) cartridges, and expansion options
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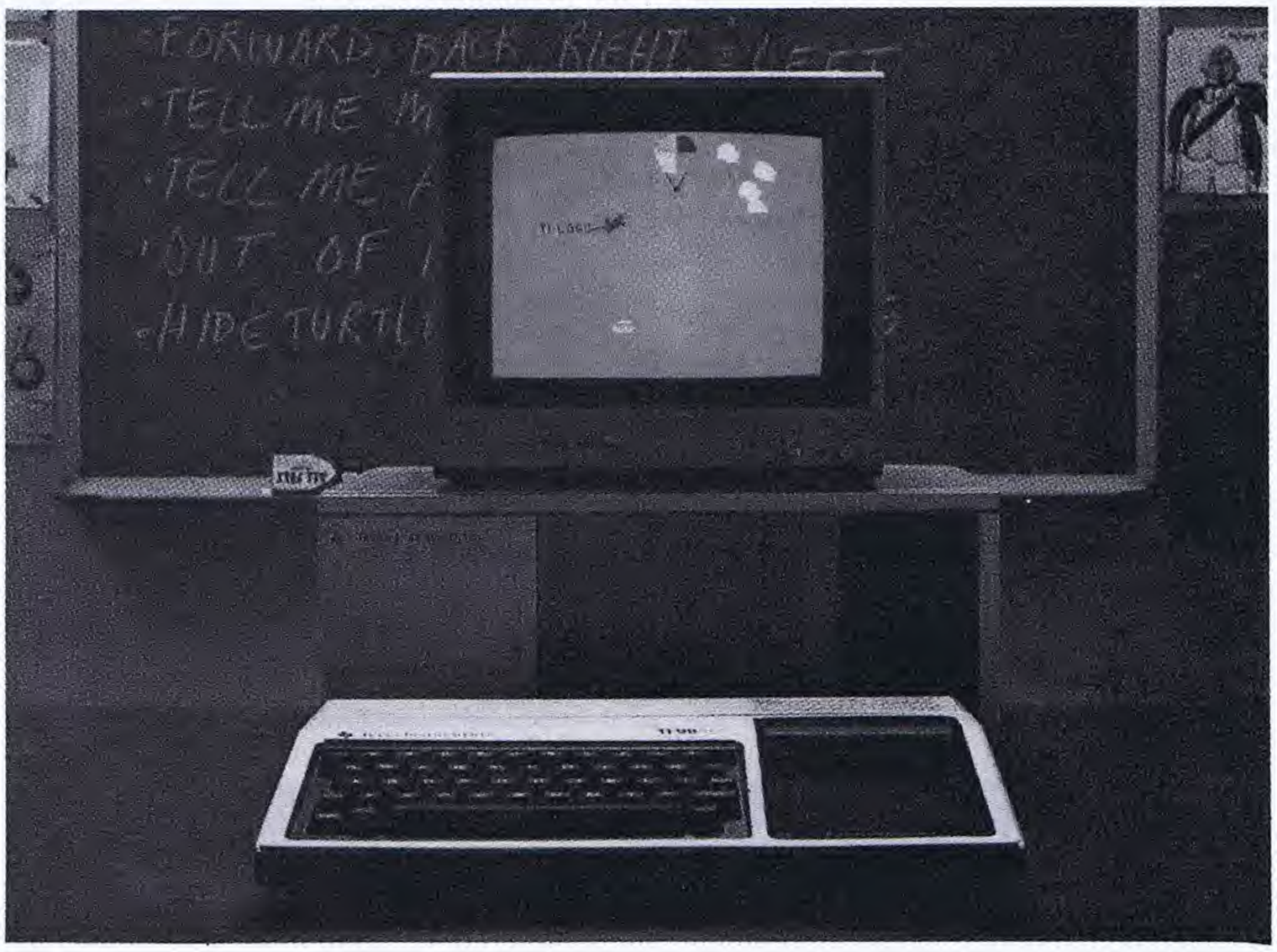
Education and the Talking Computer

Texas Instruments TI 99/4A Home Computer



A lot of letters have come through asking about EDUCATION and home computers. Most computers destined for the home market in New Zealand offer education as part of their marketing. However, the Texas TI 99/4a Home Computer offers the addition of speech that enables the computer to talk to the user, a great learning aid to younger people who find normal study hard or uninteresting.

The Texas TI 99/4a is well established overseas and boasts over 1000 different software programs available covering Home Management, Personal Finance, Entertainment, Personal Enrichment and Education. The Texas Ti 99/4a is being distributed in New Zealand by Grandstand Leisure (NZ) Ltd and they are keen to market both its "talking" and educational qualities.

The Texas TI 99/4a home computer has built in 16K RAM expandable to 72K with 20K ROM. It has a 16 BIT processor (TMS 9900 CPU) with a text screen size of 32 characters x 24 lines. It has 16 colours, sound, 32 independently moveable sprites and high resolution graphics of 256 x 192 pixels.

Back to education. Together with my 5-year-old son, a Texas TI 99/4a computer complete with speech synthesizer plus a box of software cartridges I set out to see what the Texas had to offer to the younger child. I decided that by using the cartridge enabled a child to change programs without the worry of cassette or disk operation, because everything is contained, including manuals on operating procedures.

We started with a program called Early Reading. The computer offered 3 alternatives. Pick a word, Pick a picture or Pick a story. A male voice asked you to choose by typing 1, 2 or 3 together with the enter key.

My son quickly caught on and selected pick a picture. The screen flashed a maze of colour with accompanying jingle and then displayed a grid with 9 pictures numbered accordingly. The male voice then asked us to pick a number between 1-9. On choosing No. 5, the voice proceeded to tell us that we had picked the story of the dog and the helicopter. The screen displayed both characters and spelt out each word to familiarize the viewer with how they looked. A sentence appeared above the picture and we were asked to find the word dog. A red line appeared under the text and this was moved from word to word by touching the spacebar. Once you had located the correct word you then pressed enter. The male voice either said "That's correct" and moved on or said "Oh, Oh, Try again" upon a mistake being made.

On the completion of the text, the story was printed on the screen and we were invited to read it then move on. We could then proceed with another Pick a Picture or choose 1 or 3 for another section.

This may appear boring to older readers, but it completely captured the attention of my son, as it would any other yongster.

The concept around the education is that education should be fun. The more you enjoy learning, the more you will learn.

The mathematical program took on a new quality — Space Invader types with numbers on them slowly attacked while a gun port with a mathematical equation inside moved across the base of the screen. The object is to match the equation with the correct answer which then enabled the Space Invader to be shot down. A score at right and wrong answers was recorded at the base of the screen. This allowed a parent or teacher to check the child's learning success rate.

As we moved up in age groups, the software became more and more sophisticated, adapting to the new levels of educational requirements.

Because the computer moves along at the pace set by the child, they can learn at their own rate, as opposed to some class situations where your child has to move at the rate of the majority of students.

In conclusion, the area of home education is on the increase. The computer offers something that up until now has not been available. In the past we have had talking records, tapes, movies and perhaps video tapes on educational subjects but now with both visual and verbal control through the computer, a whole new world unravels before us. I have covered education for the young child, but let us not forget that adults can use the TI 99/4a to compose music, improve the bridge or chess games, learn foreign languages, touch typing, real estate, securities analysis and the list goes on and on.

To page 9 ▷

A limitless learning environment for children to give them an Educational Edge . . .

The talking Home Computer
TEXAS INSTRUMENTS

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Connect the TI Home Computer to an ordinary TV set and start computing right away.

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DEALER ENQUIRIES WELCOME

From page 7

For those of you who ask, there is also a great line up of games to play as well, after all the work is done. It is now essential for any home computer on the New Zealand market to offer a good backup in software as well as just good looks or graphics. For those readers amongst you who require this type of computer the Texas Instruments TI 99/4a is a superb educational aid and a fun home computer.

Texas Instruments offers a wide range of options and flexible features. You can choose the accessories you need to fit your requirements for learning and communication. To add your domestic audio casette **recorder** to the home computer you need only one special cable. Now you can store your programs and data, and use all the available cassette software. With the optional wired **remote controllers** you can position or move objects on the screen. Supplied as apair, each unit includes eight position joystick and a convenient top-mounted action button.

The Peripheral Expansion System allows you to start simply, then gradually build up a more sophisticated system by plugging in additional hardware cards. The unit, measuring 14 x 15 x 20 inches has eight slots for peripheral board-type cards, one of which is used to connect the system to the computer console. Simply plug in additional peripheral cards to add the desired functions. The system also provides a space for installing one TI disk drive within the enclosure (up to additional disk drives can be added externally).

The memory expansion card adds 32K bytes of Random Access Memory (RAM) to the home computer to store programs or data.

The **Disk Memory System** enables you to store information or programs for later reference. It consists of a disk controller card and from one up to 3 disk drive units. The disk drive controller handles variable length records as well as sequential and relative files. Fresh disk space is automatically assigned for file allocation and it comes with a preprogrammed command module that supplies disk utilities and file maintenance commands. The disk-drive is a single-sided single density unit with the following features:

— 5.25 inches
— up to 89 K Bytes capacity
— 35 or 40 tracks
— up to 127 files defined
— transfer speed: 125 K Bytes/sec.
— average access time: 463 ms
— sequential and relative files
— fixed and variable length records
— internal and display file types
— input, output, update and append access modes.

Double sided and double sided/double density disk controllers and disk drives are planned to be available later on.

The **RS 232 Interface Card** is a communication interface that enables you to connect a wide range of serially formated accessory devices, including those from other manufacturers, and other computers using ASCII protocol, to the home computer. This card provides an additional parallel port for interfacing with matrix printers (centronics port) which do not have a RS232 interface.

The two RS232 ports are programmable from BASIC program:

— Baud rates: 110, 300, 600, 1200, 2400, 4800 or 9600.
— number of data bits: 7 or 8.
— parity: none, odd or even.
— number of stop bits: 1 or 2

And the following software functions: carriage return, nulls, line feed, echo and parity.

The **P-Code** card includes the UCSD-Pascal version IV.O P-Code interpreter which enables the user to run programs written for the UCSD-P system with the TI99/4A home computer or programs developed for other computers can be run on the Ti 99/4A with little if any modification

TI 99/4A Printer

— Prints text and, in the Graphic Mode, graphic data. In Graphic printing, both normal-density (480 dots/line) and dual-density (960 dots/line) modes are available.
— Prints 40 enlarged characters per line, 66 mixed characters per line, 80 normal characters per line, or 132 condensed characters
— Can be set to skip over paper perforations automatically.
— Has programmable line spacing, vertical and horizontal tabulation, and a programmable buzzer.
— Prints 80 characters per second bi-directionally with logic-seeking

The **TI Solid State Speech©** synthesiser makes possible exciting addition of speech to the TI 99/4A home computer. Use of the speech synthesiser requires a command module, such as the speech editor, which is programmed for speech without the need to do any programming. Speech can also be included as part of your own programs in TI BASIC. The speech synthesiser is entirely electronic. There are no taped voice recordings or any other traditional medium. Instead, a vocabulary of words and phrases is permanently stored on chips contained within the speech synthesiser. The speech synthesiser contains a resident vocabulary of almost 400 words in English. After all, the TI home computer offers you all the opportunities of big computers. ■

Software For:

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QUIK-LOADER: 16K ZX-81

Allows loading and saving at 2½ times normal tape speed. Can be incorporated into existing software.

$15.95

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16K,48K SPECTRUM 16K VIC-20

Allows Basic programs to be keyed into the computer and then translated into machine code by the compiler program. The compiler takes approximately 3K of memory.

No string commands, and only integer numbers.

$29.95 (Specify Machine Type)

ARCADE GAMES: 16K ZX-81

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WORD PROCESSOR	$19.95	(Quik Loader)
SPACE COMBAT	$19.95	(Quik Loader)

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16K ZX-81 — 48K SPECTRUM —
16K TRS-80 — SYSTEM-80

THE CAVES OF TIME	$19.95	(Specify Machine Type)
ROBOTS ON TERMINUS-IV	$29.95	(Specify Machine Type)
DETENTION CENTER ON NEBULON	$29.95	(Specify Machine Type)

This adventure is our current contest adventure. You could win a **$100** store voucher for **Whitcoulls** if you can complete the adventure.

DRIVERS LICENCE QUESTIONAIRE: 16K ZX-81

Use the computer to practice and learn the written examination for your driver's Licence. This was reviewed and approved by the Auckland City Council Traffic Department.

This software is supplied on 5 tapes and is at Quik Loader speed. Quik Loader is supplied free with the software.

$69.95

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PLEASE SPECIFY MACHINE TYPE

OVERSEAS INPUT

Tom Cherrie

Hi, I'm Tom Cherrie. While you are reading **Computer Input** magazine, sitting on the beach rubbing on the suntan lotion, I'll be on the other side of the world in London, trying to keep my peripherals from freezing.

Each month I will bring you news, updates, new arrivals and gossip on overseas development in the personal computer field. But, best of all, you will read here first due to the slowness of overseas magazines in reching New Zealand.

Computers for the home market in the US are sold extensively in (wait for it) toy shops. And software is sold in most book shops. The hardware is now being clustered into segments based on memory capacity and price.

Also, according to Tom Lopez, Senior Vice-President of American Game Cartridge Manufacturer, Activision Inc, one third of all games are sold in the US to adults who have no children. Over four million cartridges of their game "Pitfall" have been sold worldwide by the company. Worth $US70 million wholesale. Latest news from Australia is that the Commodore 64 home computer has been reduced from A$699.00 down to A$499.00 due to increased competition in the computer field.

Meanwhile, back in the US, Mattel, the makers of the Aquarius Home Computer, are having financial difficulties. Their electronics division has now lost an amazing $US377.7 million in just six months. As a result of this, cutbacks in the electronics division has already started as reported by "Australasian Sportsgoods and Toy Retailer Magazine" (the 'Aquarius' which was to have been marketed soon in Australia has already become a victim. It will no longer be sold outside of a few American outlets, and marketing in non-English speaking countries will be transferred to other companies).

So, as you can see, things are indeed hotting up in this fast-growing industry. That's it for this month, so Merry Xmas and Cherrio.

TOM

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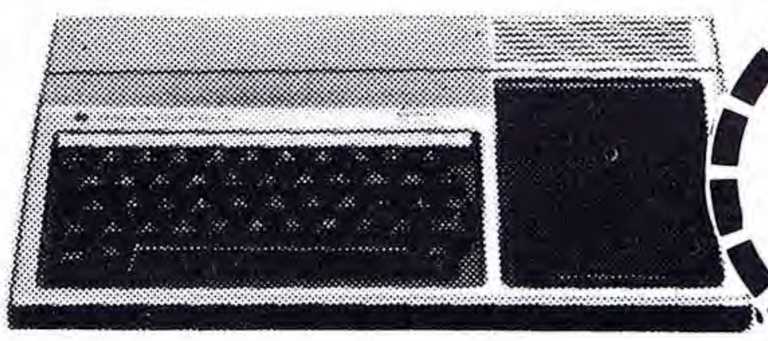

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COMX 35 — THE CLEVER COMPUTER

With the marketplace in its current condition — a new home computer being launched every week, it seems — the Comx 35 has come at a time of stiff competition.

The Comx has some very attractive features — 32K user RAM, built-in joystick, tough construction, moving keyboard, built-in speaker & some very interesting BASIC commands, etc — but also a few darker features.

The Comx is of a sturdy design, it would take more of a beating than many other computers I've seen (especially with the inevitable seven-year-old).

We gather that the Comx will be either a black or cream case with gold front and black keys.

The keyboard is moving-key type, with a good positive feel to it. The keys give an audible click when pressed and have about 2-3mm travel.

The keyboard is basically QWERTY with RESET, ESCAPE, CONTROL and DELETE down the left hand side. Pressing reset & space bar causes a complete restore of the machine back to 'switch-on' status.

Everything needed to get the Comx up & running is provided (except the cassette unit), power supply, leads to & from cassette (ear & mic) and lead to TV. It's quite a relief to find an on-off switch on the rear of the Comx.

There is an edge connector on the back too, presumably for expandable RAM, ROM cartridges, printer and disk, although no information yet on them.

The BASIC is average with a few surprizes — fixed (allows you to fix the decimal places shown), format (allows yu to tabulate figures neatly), fval (allows you to input expressions as a string to be worked out by the Comx), exit (allowing you to escape from a loop or subroutine).

There are three commands for colour. Colour controls the colour of all printing on the screen (a choice of 12 colours). Screen, which gives you a choice of 8 colours for the background and Ctone which sets the output colour to a lighter shade of the background colour.

The graphics of the Comx 35 although acceptable, are slightly less than average. The Comx allows you to program your own graphics as well as the standard graphics provided, does not have any form of high resolution graphics.

Sound is quite good on the Comx, without going into too much detail it allows you a lot of variation with the commands being — music, noise, tone & volume.

The manual is quite good and gives you all the information you need to get you a long way down the Comx road.

In conclusion, the one thing that might detract from the popularity of the Comx 35 is its CPO. The 180R is, in the realms of modern home computing, a veritable dinosaur. This poses the problem of software, I doubt if there are many 180R programmers still around. However, if Comx can achieve a good amount of software backup (despite the 180R) this should prove to be a good little machine. Although a lot would depend on the price of the Comx. At the right price this machine should be popular.

AARDVARK L.T.D.

TRS-80 COLOR COMMODORE 64 VIC-20 SINCLAIR/TIMEX TI99/4A

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32K TRS 80 COLOR Version

Adds a second level with dungeons and more Questing.

WIZARDS TOWER – This is very similar to Quest (see above). We added wizards, magic, dragons, and dungeons to come up with a Quest with a D&D flavor. It requires 16k extended color BASIC. 13k VIC, Commodore 64, TRS-80 16k Extended BASIC. TI99/A extended BASIC.

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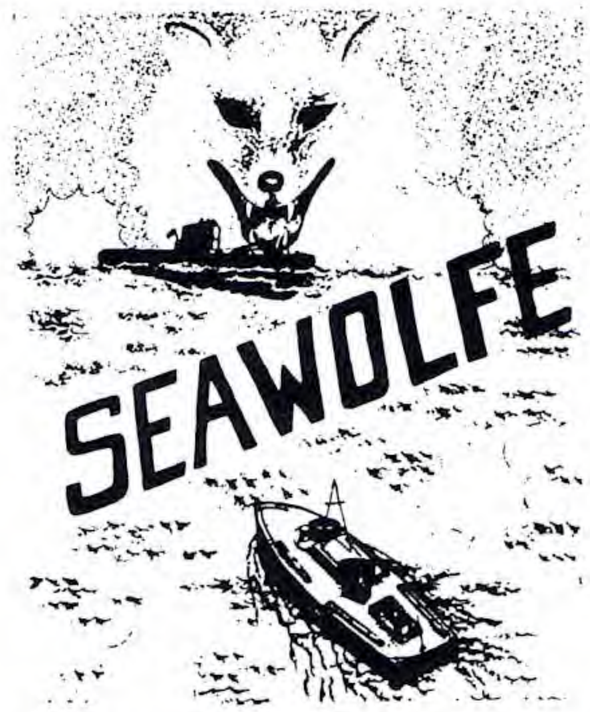
Adventuring requires 16k on Sinclair, and TRS-80 Color. They require 8k on OSI and 13k on VIC-20. Now available for TI99. Any Commodore 64.

ESCAPE FROM MARS
(by Rodger Olsen)

This ADVENTURE takes place on the RED PLANET. You'll have to explore a Martian city and deal with possibly hostile aliens to survive this one. A good first adventure.



SEAWOLFE – ALL MACHINE CODE In this high speed arcade game, you lay out patterns of torpedoes ahead of the attacking PT boats. Requires Joysticks, at least 13k RAM, and fast reflexes. Lots of Color and Sound. A fun game. Tape or Disk for Vic20, Commodore 64, and TRS-80 Color.

Dungeons of Death – This is the first D&D type game good enough to qualify at Aardvark. This is serious D&D that allows 1 to 6 players to go on a Dragon Hunting, Monster Killing, Dungeon Exploring Quest. Played on an on-screen map, you get a choice of race and character (Human, Dwarf, Soldier, Wizard, etc.), a chance to grow from game to game, and a 15 page manual. 16k Extended TRS-80 Color, 13k VIC, Commodore 64.

PYRAMID (by Rodger Olsen)

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HARDWARE REVIEW

From page 12

COMX 35 Specifications

CPU	1802A
ROM	16K
STANDARD RAM	35K
USER RAM	32K
SOFTWARE	Extended BASIC (Semi-Compiler) Editor (built-in) FORTH (optional)
TEXT DISPLAY	40 columns x 24 lines
CHARACTER SET	64 Upper Case ASCII
GRAPHICS	64 user programmable (Multi-color graphic) characters
COLORS	8 (background, character & symbol)
SOUND	8 octaves, (actually 1024 tones), 16 volume steps, plus special effects

SCREEN RESOLUTION	PAL 240 x 216 NTSC 240 x 192
KEYBOARD	55 moving keys alphanumeric and function keys
JOYSTICK	Built-in 4 directions
SPEAKER	Built-in 4.5 cm 8Ω 250mW
POWER	AC adapter, 9VDC/500mA
VIDEO MODULATOR	Built-in PAL
STOP WATCH	Built-in
INTELLIGENT I/O CONTROLLERS FOR VIDEO & KEYBOARD	Built-in
EXPANSION	44 pin connector for direct plug-in of ROM packs, printers and expansion box for additional expansion
DIMENSION	29 x 16 x 4.5 cm

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The Byte Shop, BNZ Bldg, 1 Fort St, PO Box 2191, Ak. Contact: Arthur Crookes. Ph: 32-860.

Simmons Personal Computers Ltd, 4 Boston Rd, Mt Eden, PO Box 8757 Symonds St. Contact: Joe Radich Ph: 798-301.

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City Computers, 4th Flr Canterbury Arcade, PO Box 5128, Auckland. Contact: Lance Kirschberg. Ph: 278-3988.

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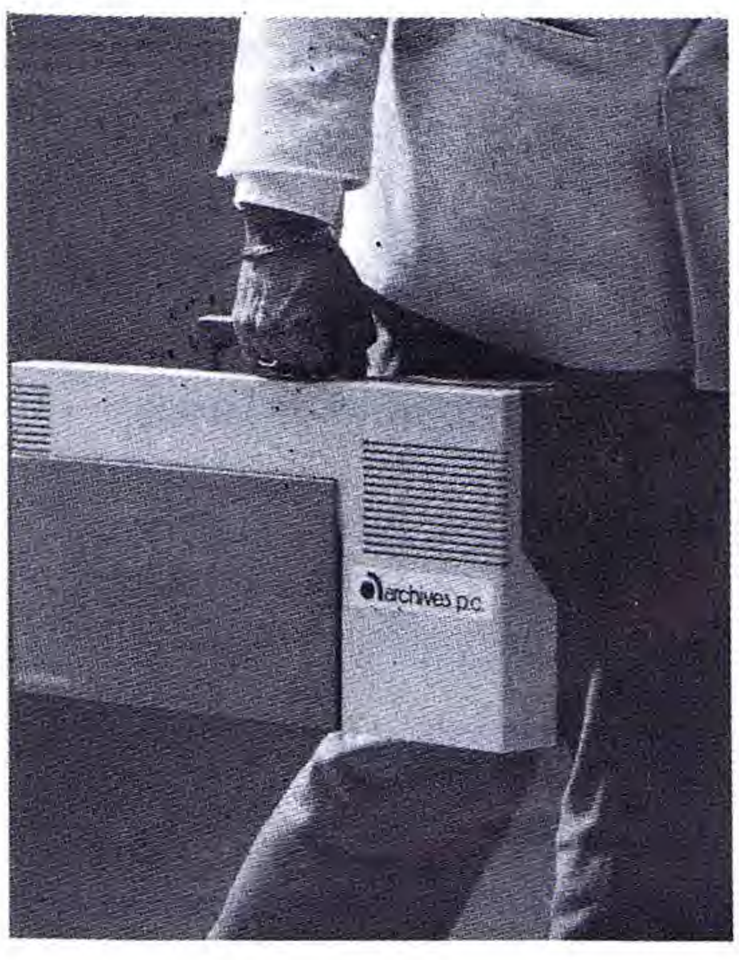
Archive's PIED PIPER

Yet another 64K, Z80, CP/M computer is available in New Zealand. However, this Canadian designed computer is different in as much as it is a very powerful machine at a very competitive price and it is also portable.

Archives Computers Distributors Ltd in Auckland, have sole distribution rights in New Zealand and are currently appointing dealers to handle all sales for the Archives Pied Piper computer.

HARDWARE

The basic Archives Pied Piper consists of a console containing the computer keyboard and single disk drive. The disk drive is a slim line 5¼" unit from Mitsibishi which contains a massive 1Mbyte unformatted and 784kbyte formatted storage. This capacity is more than most computers have on two drives and is achieved by ordinary double-sided, double density, 96T.P.I. recording. With the addition of optional second disk drive the user has the capacity of 1.6-Mbytes — a truly powerful system.



The keyboard is an ASCII standard typewriter style with the usual microcomputer additions.

The Archives Pied Piper runs a standard monochrome monitor and the standard format is 80 characters by 24 lines. With the addition of a TV modulator the unit can be easily conformed to enable use with a television screen giving the typical 40 character display.

SOFTWARE

Not only is the Archives Pied Piper such a powerful computer, the purchase price includes packaged software for word processing, electronic spreadsheet and a file management program.

The unit comes with customised CP/M 2.2 operating system and the suite of programmes, Perfect Writer, Perfect Speller, Perfect Filer and Perfect Calc. A blank "Scratch" diskette is also supplied to get the user started.

Working under the CP/M operating system enables the user to select software for particular applications from a wide choice of suppliers.

TECHNICAL SPECIFICATIONS

CPU: Z80A Microprocessor.
Memory: 64K RAM.
Keyboard: ASCII Standard.
Disk Drive: 5¼" slim line drive with 1 Mbyte unformatted and 784kbytes formatted storage. Optional second drive with same capacity available.
Display: 24 lines of 80 characters for video monitor and 24 line of 40 characters for television.
Ports: Centronics parallel printer port. Optional RS232C serial port.
Weight: 7 kilograms.

PRICES (Tax Inclusive)

Pied Piper Computer	$3750
Monitor	$ 385
Optional Second Drive	$1199
Optioal RS232 Port	$ 385

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ERIC'S INPUT

HOW TO BUY A HOME COMPUTER — when you don't know a thing about them

This Christmas will be the greatest test for you when buying a home computer. Never have so many different computers been for sale by so many different shops. It wasn't so long ago that only specialist shops sold computers and those same shops were usually run by computer fanatics (experts). A lot has happened over the last 30 years. The microprocessor IC chip contains the same amount of computing power that took tons of equipment thirty years ago.

One early computer, the 'ENIAC' occupied 3000 cubic feet, weighed 30 tonnes, had 18,000 tubes, 70,000 resistors, 10,000 capacitors and used 140,000 watts of power.

Today the average home computer weighs only a few pounds, uses a small amount of power, yet is more powerful and faster than ENIAC, and is also about 10,000 more reliable.

So, as you can see, all these changes are being made in our own lifetime. What I am leading up to is that choosing the right computer is more important now than ever. Some shops now selling computers may regard them no more than just another home appliance and may offer no more than basic software and backup. Today's great discovery may become tomorrow's white elephant. A number of people I have spoken to after they have read our magazine say that to buy a home computer they had to first justify what a computer could do for them. The following letter asks similar questions.

Dear Eric,

Computer hand books seem pretty lousy to follow. There are lots of good articles on BASIC and the initial introduction to computers, but very little on the next stage.

For instance, there's a lot of us out here not really knowing how to open and close files (and why?) — the different sorts of files and the like.

I'm talking about a middle group who want to do more with a home computer than play games but are still pretty vague about what a data base system does or what sort of home business equipment programs there are to help an intellignt female to do more than keep recipes!

Anyway, your magazine looks brave and hopeful — and cheap — so long may you continue.

Here's my bit towards the next year's copies with a vote of confidence.

Elisabeth Duncan
DUNEDIN

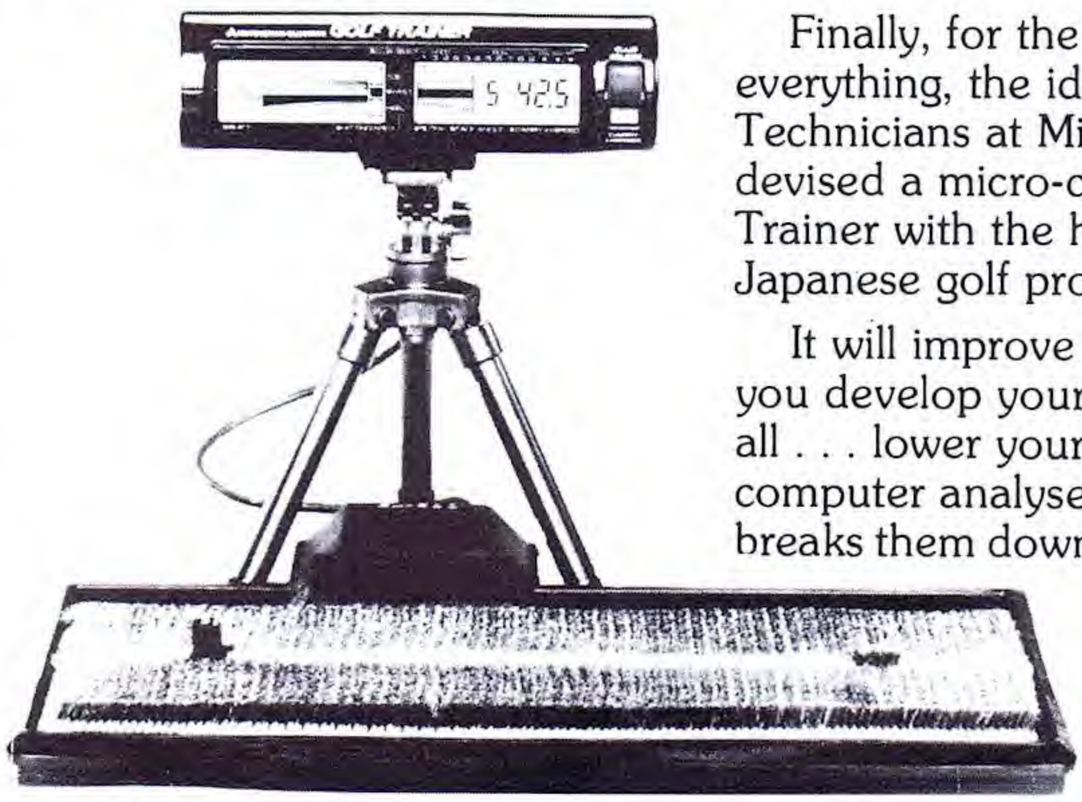
Computer hand books can be pretty heavy going.

A lot I have read have been useful for technical information but can't be used as a guide for beginners. In this edition of **Computer Input** we have a book review on "Computers for Everybody" by Jerry Willis & Merl Miller. Not only is the book one of the best I have read for beginners but I met Merl Miller in November while he was here from the USA. It was refreshing to talk with someone who believes that everybody should be able to understand computers. Also on interest he told me in America computer software is sold in bookshops. So there may be hope yet.

You mention in your letter that you want to do more than keep recipes. During the TI99/4A review the following software was at our disposal:

- Weight Control and Nutrition Plan personalised balanced meals for family fitness, individual food preferences, physical fitness.
- Develop & stick to your own exercise programe.
  (It even checks your pulse as you go from stage to stage and tells you your heart beat.)
- Music Maker
- Adult or children learn to write music
- Securities Analysis for professional or amateur investors
- Personal Real Estate, etc.

So as you can see there is plenty out there to do. Most of all you should familiarise yourself with your computer before attempting to type in more advanced programmes. All it takes is time.



Finally, for the golfer that has everything, the ideal Christmas gift. Technicians at Mitsubishi have devised a micro-computer Golf Trainer with the help of a leading Japanese golf pro.

It will improve your control, help you develop your swing and best of all . . . lower your score. The micro-computer analyses each shot and breaks them down into 9 key factors. A display unit gives you an instant feedback showing head speed, carry, hitting area, shot direction, shift, duffing face angle, distance from target and blow. I understand the golf trainer retails at $699 and is sold by

Melco Sales (NZ) Ltd.
P.O. Box 30-772 Lower Hutt.

If you have any questions you would like answered, write to:

I look forward to hearing from you soon.

Regards
ERIC

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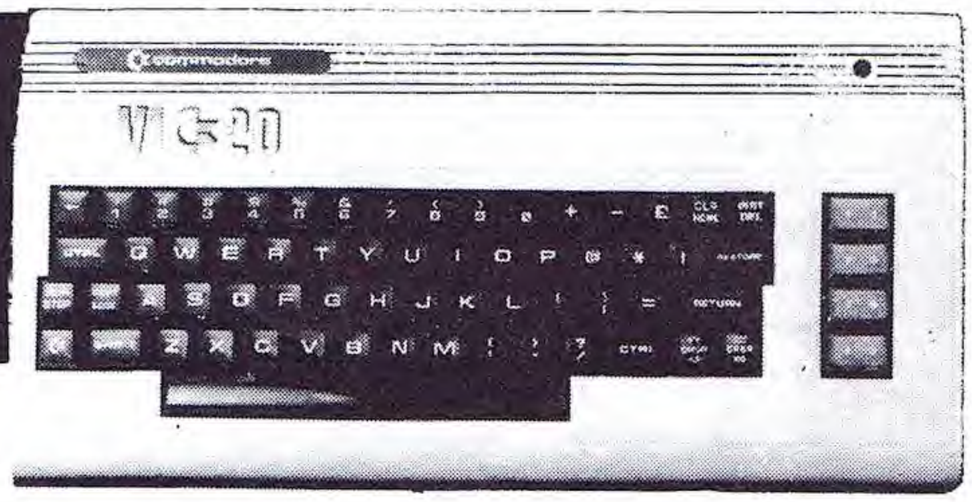
$495



Features include: * 5K RAM expandable up to 29K * 8 border colours, 16 screen colours * 8 screen character colours * 3 audible tone generators, each of 3 octaves * a 'white noise' generator * 88 character program line length * 64 ASCII character set * full PET-type graphics character set generated directly from keyboard * 176 x 158 pixels (27,808 in total) maximum resolution * 8 programmable special functions accessed via 4 special function keys.

COMMODORE 64 $995

Features include: * 64K built in RAM * 40 column colour display — tv interface * Upper and lower case characters and graphics * Sprite graphics on eight levels * Music synthesiser with three voices and nine octave range * 16 colours available simultaneously * 8 bit parallel user port.

PRINTER $795

The MPS-801 Printer prints both capital and small letters, numbers, and all the graphic characters available on your computer. It will evenprint custom made graphics and charts that you design on your VIC-20 or Commodore 64.

AUCKLAND:

CB CENTRE
15A PORANA ROAD, TAKAPUNA
Phone Ak 444-8062.

COMPUTER CRAFT LTD
3049 GREAT NORTH ROAD, NEW LYNN.
Phone AK 876-608 or 781-700.

SUPATECH ELECTRONICS
430 MT EDEN ROAD, AUCKLAND
Phone AK 65-216.

RIEGER'S HOME APPLIANCES
238 BROADWAY, NEWMARKET.
Phone AK 543-804

HAMILTON:

DOLLAR $AVE COMPUT-A-CENTRE
22 TRISTRAM STREET.
Phone (071) 8298.

DISK UNIT 1541
$995

For the VIC-20 and the Commodore 64. A disk unit transforms your computer into a high-speed system ideal for the more serious programmer or small businessman. It enables you to get the best out of your utility programs.

Features include: 170K bytes capacity. Uses soft-sectored standard 5¼" single density floppy disks. Direct interface to computer. Direct compatibility with Printer. Price includes all cables.

GENIE INPUT

Olwen Williams

A letter from E. McAlpine in the last issue of **Computer Input** pointed to a need felt by many Colour Genie owners — information.

Overseas magazines don't publish much about this machine, and the makers seem to be better at producing machines than they are at providing information on them. I hope to fill this void for New Zealand owners.

I would like some indication as to what type of information you would like, so send in your comment and problems and I'll try to fill your needs.

This month I am bringing you news of a book about the Colour Genie, a memory map, software reviews, a game to key in, and a competition.

REPLY TO E. MacALPINE

You can get auto return on the function keys by defining them in the normal way with the FKEY instruction but OMITTING the final quote mark on the instruction. If you do this in a program it means that the FKEY instruction must be the last one in a line.

Colours, use the COLOUR instruction and use parameters up to 16, rather than sticking to 1-8 as the manual says. Also try poking into the colour RAM area, to alter the colour of text on the screen.

Printers, I don't see too many problems in connecting an Epson parallel printer to the Colour Genie. I'm told that it cannot be plugged straight into the interface, but I would expect it just to need the correct cable, which you could have made, or make yourself.

Disks — I am assured that the Colour Genie disks will be available very soon, the DOS is going to be Genie DOS, whatever that is. The English Colour Genie Users' Group report the launching of an interface that will allow the Colour Genie to use Genie I or II (System 80) disks. I don't know of any plans to import this, or any other details on this, but there will probably be more information on it soon. Software RS-232, I'm at a bit of a loss about this too, I think it means that this interface is entirely controlled by software.

REVERSE THE NUMBERS

This is a straight-forward program which does not use any special features of the Colour Genie. This means that it is quite suitable for conversion to other machines.

Although the concept of this game is simple, it still requires careful thought to sort the string of numbers in the fewest possible moves.

For non-Genie owners wanting to adapt this program to their machines, there are some things which may be different on your machine.

(i) RND(9) is a random integer between 1 and 9. You may need to use 9*RND(0) or 9*RND(1).

(ii) PRINT @nn positions the cursor. Use the cursor positioning for your own machine, and a suitable position on the screen.

(iii) INKEY$ returns one character from the keyboard (null if no key has been pressed. In this program I$ = INKEY$ could be replaced with INPUT I$.

```
10  REM REVERSE THE NUMBERS
20 CLS
30 PRINT "DO YOU REQUIRE INSTRUCTIONS"
40 I$ = INKEY$: IF I$ = "" THEN 40
50 IF I$ = "Y" OR I$ = "y" THEN GOSUB 330
60 W = 1: FOR X = 1 TO 9: X$(X) = " ": NEXT X
70 FOR X = 1 TO 9
80      M=RND(9): IF X$(M) = "Y" THEN 80
90      X$(M) = "Y": N(X) = M
100 NEXT X
110 CLS
120 PRINT@210,N(1);N(2);N(3);N(4);N(5);N(6);N(7);N(8);N(9);
130 PRINT @880,"HOW MANY TO REVERSE"
140 Y = 0
150 FOR X = 1 TO 9: IF X = N(X) THEN Y = Y + 1
160 NEXT X
170 IF Y = 9 THEN 270
180 I$ = INKEY$:I = VAL(I$): IF I<2 OR I>9 THEN 180
190 PRINT @880,"
200 W=W+1
210 FOR X = 1 TO INT(I/2)
220      Y = N(X)
230      N(X) = N(I+1-X)
240      N(I+1-X) = Y
250 NEXT X
260 GOTO 120
270 PRINT @880,"YOU USED";W;"MOVES TO SORT THE STRING"
280 PRINT @920,"PLAY AGAIN? Y/N";
290 I$ = INKEY$
300 IF I$ = "N" THEN STOP
310 IF I$ = "Y" THEN 60
320 GOTO 290
330 PRINT"THE NUMBERS 1 10 9 ARE ARRANGED"
340 PRINT "IN RANDOM ORDER. ARRANGE THEM BY"
350 PRINT "BY REVERSING SUBSTRING. THE GENIE"
360 PRINT "WILL PROMPT FOR THE NUMBER OF "
370 PRINT "POSITIONS TO REVERSE."
380 PRINT
390 PRINT "PRESS ANY KEY TO CONTINUE"
400 IF INKEY$ = "" THEN 400
410 RETURN
```

COMPETITION

This is just for Colour Genie owners!! Improve on the above program. Add bangs, bells or whistles, flashing colours or moving graphics, best scores, or whatever takes your fancy. The version which best uses the capabilities of this versatile machine wins a copy of Ian Sinclair's book **Mastering the Colour Genie.**

Send your cassette with the program to:

Genie Input,
Nomac Publishing,
Freepost No. 671,
P.O. Box 39-278,
Auckland West.

Closing date: January 14, 1984. Remember to include your name and address. Return postage and a label with your name and address would be helpful for returning cassettes.

GENIE MEMORY MAP

0000-3FFF	ROM
4000-43FF	Communications Area
4400-47FF	Lo-Res Screen
4800-57FF	Hi-Res Screen
5800-BFEF	Normal Basic Area
BFF0-BFFF	Shape Table
C000-EFFF	12K ROM Cartridge
F000-F3FF	4Bit Colour RAM
F400-F7FF	Prog Graphics Area
F800-FBFF	Keyboard Area
FC00-FFFF	Disc Initial Prog Loader

To page 33 ▷

SOFTWARE

ZX81

CHESS 1-4 (ZX81) $29.95. Now play up to 10 different levels of chess on your ZX81 castling and En Passant captures all included. Plus printer output for either permanent record of all moves or copy of graphics board.
INVADERS (ZX81) $24.95. The old favourite space invaders — what else can we say but go get 'em
ADVENTURE TAPE 1 — 3 Full Adventures for the 16K ZX81 $29.95. Greedy Gulch — Discover the lost treasure mines in a deserted town.
Pharaoh's Tomb — try to discover the long-dead Pharoah's treasures.
Magic Mountain — Recover the ancient Scrolls of Wisdom.
NOWATNIK PUZZLE AND OTHER DIVERSIONS $29.95. For either the ZX81 or 16K Spectrum. This is a program ideally suited to the T.V. display. A mind boggling challenge for puzzle enthusiasts, millions of different permutations.

SPECTRUM

MAZEMAN (Spectrum 16K + 48K) $29.95. Use your skill to collect as many squares as you can but beware the hungry Hobgoblins. They chase relentlessly and you have only three lines. Grasp the magic Abersword and you have approx 10 seconds to counter attack and earn bonus points. Can you do it.
ADVENTURE (484 Spectrum) $34.95. Can you solve the secret of the caves. The original adventure game that will keep you busy for hours. PSST. Drop the black rod when you see the bird.
THE KNIGHTS QUEST (48K Spectrum) $34.95. You are a Knight of Camelot, set on finding the lost treasures of Merlin. On your way you will discover a princess held by the Wicked Wizard of Trill, battle Scorpions, elves, eagles. The list is almost endless! A full blooded adventure using split-screen graphics and text.
ABERSOFT — THE WIZARDS WARRIORS (48K Spectrum) $34.95. Control your warrior using your chosen method selected from the many options included in the program. Pit your wits against the denizens of the wizards crypt. But beware for they become even more difficult to evade. Can you withstand them in the final battle of the Abyss with nowhere to hid? Kill the Magic Eagle or Wizard for maximum points.

BBC

CASSETTE 1 — STAR TREK. A superb version with 8 x 8 Galaxy Klingons, Phasers, Torpedoes, etc. — CANDY FLOSS. A tremendous new game in which you run a candy floss stall on Blackpool's Golden Mile. But watch the weather and the donkeys! **Only $34.95 MODEL A MODEL B**

CASSETTE 2 — Contains an exciting collection of games with music and graphics to keep the family amused for hours: HANGMAN, KRYPTOGRAM, DICE, BEETLE, GRAND NATIONAL and MUSIC. **Only $24.95 MODEL A MODEL B**

CASSETTE 3
MUTANT INVADERS. A brilliant new game. You can destroy the mutants before they land and try to destroy you with their radioactivity. BREAKOUT: A terrific version of the arcade game. **Only $34.95 MODEL A MODEL B**

CASSETTE 4 — BEEP-BEEP. Excellent version of the popular 'Simon' game. Very much enjoyed by children. **Only $24.95 For MODEL B (or + 32K)**

CASSETTE 5 — Contains BEEBMUNCH. Our version of the record breaking PACMAN arcade game. Stunning hi-resolution colour graphics. **Only $34.95 For MODEL B (or + 32K)**

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CASSETTE 7 — Contains 3D MAZE. Pit your wits against the computers logic in this highly realistic graphical game. **Only $24.95 For MODEL B (or + 32K)**

CASSETTE 12 — FLAGS. A superb educational program. The flags of the world are drawn in hi-resolution colour graphics. The program then tests your knowledge of flags and geography. Have fun while learning. **Only $24.95 For MODEL B (or + 32K)**

CASSETTE 13 — HYPERDRIVE — A new, very addictive machine code arcade game. Guide your laser tanks around the network of passages destroying the drone Aliens — but beware, evil OTTO lies in wait! **Only $34.95 For MODEL B (or + 32K)**

CASSETTE 9 — Contains Model B Invaders. A superb feature adaptation of the arcade 'Space Invaders' game in machine code and hi-resolution colour graphics. **Only $34.95 For MODEL B (or + 32K)**

CASSETTE 11 — ATLANTIS. The superb fast action arcade game written in machine code to illustrate to the full the machines fantastic colour graphics and capabilities. This game includes all the usual ATLANTIS/SCRAMBLE features. **Only $34.95 For MODEL B (or + 32K)**

CASSETTE 14 — STRATOBOMBER — Arcade game. Can you keep the enemy fleet at bay, destroy the rogue Star Ship before it destroys your home planet? Superb graphics. **Only $34.95 For MODEL B (or + 32K)**

CASSETTE 15 — LEAP FROG — At last the fabulous Frogger game reaches the BBC Micro. Superbly written full colour machine code. The best version. **Only $34.95 For MODEL B (or + 32K)**

CASSETTE 16 PONTOON & PATIENCE — Excellent rendition of the two very popular card games. **$34.95 For MODEL B (or + 32K)**

CASSETTE 17 5-A-SIDE SOCCA — At last!! The 2 player m/c game you have all been asking for. Uses joysticks or keyboard. Really exciting. **$34.95 For MODEL B (or + 32K)**

VIC20

SHARK ATTACK. Can you avoid the sharks and the octopuses while you trail your atomic net? Very addictive game. Requirements — 3K expansion. **$19.95**

MARTIAN RAIDER. Fly across the enemy landscape, bombing as you go, but watch out for missiles! 3K expansion **$19.95**

VIXEL NO. 3. 3 Programs on one tape. In WARP you fly a space craft down an ever narrowing tunnel. FIFTEEN is a version of the classic puzzle (usually sold as a plastic toy). RAIL. Easy when there's only one train, but as you keep succeeding so the number of trains to be controlled keeps growing. Requirements — joystick for WARP & FIFTEEN — minimum of 3K memory expansion for RAIL.

REBEL DEFENDER. The imperial forces have just invaded your base planet, the water world of Aakwa. They have brought with them their most awesome weapon, the imperial stalker. Requirements — 8K expansion, paddles. **$24.95**

ULTIMATE TANK. The year is 1999. Earth is being overrun by mutant spiders and giant space eyes. Each battle zone is patrolled by 1 or 2 nuclear tanks. Their mission is to search out and destroy. Requirements — 8K expansion, joystick. **$24.95**

CHIMP CHASE. The object of chimp chase is to guide a small yellow chimp through the zoo in order to open all the cages. Good colour and sound effects. Requirements — Unexpanded VIC, joystick optional. **$24.95**

COSMIC CRYSTALS. As commander of a Cosmic Space Station it is your mission to defend a sector of the force field vault where the 'Cosmic Crystals' are kept. Requirements — Unexpanded VIC, paddles. **$24.95**

BLASTEROIDS. As the captain of a fleet of 3 space cruisers, your mission is to eliminate an asteroid field. Good colour and sound; 3 skill levels. Requirements — Unexpanded VIC, joystick optional. **$24.95**

CRIBBAGE. The age-old card game for 2 players — sorry! I meant for one player and his computer! Requirements — 16K expansion. **$24.95**

MARTIAN RAIDER. Similar to skramble. Your mission is to fly across the Martain landscape destroying their cities, but it's not easy! Enemy missiles and UFOs are out to get you. Your fuel range can be extended by hitting enemy fuel dumps. Requirements — Unexpanded VIC, joystick optional. **$19.95**

CITY BOMBER. Flatten the buildings with bombs so that you can land your plane safely. Very addictive. Requirements — Unexpanded VIC. **$19.95**

MIS CHECKBOOK. Keep track of your cashbook; results filed on tape. Running cheque balances, dates, search by criteria, analyses, etc. Requirements — Unexpanded VIC. **$19.95**

▷

MAIL ORDER SOFTWARE

MULTISOUND SYNTHESIZER. The electronic music synthesizer for the VIC. Brilliant! Requirements — Unexpanded VIC. **$19.95**

MICROHEX ASSEMBLER/EDITOR. Microhex is 6502 Assembler/editor which allows you to produce a machine code listing using the 6502 Mnemonic Instruction set. Requirements — Minimum 3K expansion. **$24.95**

VIC AMORTISATION. This'll help you to be a bit better informed about the next loan you want! Requirements — Unexpanded VIC. **$24.95**

VIC TRIP & PARTY PLANNERS. 2 programs which will help you to accurately plan what the costs are likely to be for your next trip or party. Requirements — Unexpanded VIC **$24.95**

MAIL-IT 20. A very easy to use mailing list/label program for the VIC. Requirements — minimum 8K expansion — datasette and/or 1540/1541 disk drive — — VIC or RS 232 printer. **$24.95**

STOCK MASTER 20. Stock Master is an inventory control program.
Requirements — 8K expansion — datasette or 1540/1541 disk drive — 1525/26 printer (optional). **$24.95**

C64

REPTON — Diskette Only $84.50. Repton is a 'Defender' type game, but more complicated and sophisticated than any you'll have seen. The lower part of the screen gives you a cockpit view of the battle area, a nice blend of Defender and flight simulation. Simply amazing. What more can we say!

FAST EDDIE — Diskette Only $84.50. Just send Fast Eddie around the screen using a joystick, climb up and down ladders and grab point-scoring objects. Easy. Well it would be if it wasn't for these nasty little critters that keep racing at fast Eddie. This game is more challenging and difficult to master than most.

SQUISH 'EM — Diskette Only $84.50. You're in a partly constructed building, and you must climb to the top to retrieve various objects by climbing up pipes from floor to floor. See Software Review.

JAWBREAKER — Diskette Only $73.00. If you like the prospect of being let loose in a candy store then you'll love this game. If not then you'll still probably love this game! The most hilarious moment occurs when a toothbrush races out to brush your teeth! (So perhaps it even qualifies as educational!!!). Beautiful musical effects, making the most out of the 64's sound capabilities.

TEMPLE OF APSHAI — Disk or Cassette $89.00. Enter the "Temple of Apshai," the first in our DUNJONQUEST series, the computer game that offers you the chance to perform heroic deeds in a labyrinth filled with treasures, traps and monsters. Animated colour graphics portray the "Temple" and all its contents — magic, monsters, doomed cities and damsels in distress. Do battle in real time, with over 20 types of monsters, each represented by a unique graphic shape. Special sound effects intensify your quest, with arrows flying, wings beating and footsteps approaching in the dark.

Curse of Ra — Upper Reaches of Apshai. Expansion modules for Temple of Apshai, which provide further thrills; NOTE: these are not complete games in themselves — you must have Temple of Apshai to use them. Available on diskette or cassette. **Price (each) $58.00**

MONOPOLY. The great board game on computer for 2 players. This is a long well written program that should provide hours of fun. Excellent colour graphics and sound. The board is displayed on screen. **$19.95.**

OTHELLO/REVERSI. It is a game of skill, played on an 8 x 8 square board. The object is for a player to to occupy more spaces on the board than his opponent. **$19.95**

COLLISION. A fast paced game requiring a joystick and lots of time, as it's rather addictive. Choice of whether you play the computer or two players, each with a joystick, play each other. **$19.95**

MATCHMAKER. This is an enhanced variant of the card game 'pairs'. Each player (several can play) chooses two cards which the computer turns face up to display if they are the same then that player scores points. **$19.95**

DELTA RACE. A version of the popular moon-landing type games with excellent high resolution graphics and sound effects. Once you've landed successfully, you must negotiate your way through an underground silo. Joystick required. **$19.95**

TRONIC CYCLE. You are the driver of a high speed cycle which you must manouvre within a predetermined grid, avoid randomly placed obstacles. Action sound effects, multiple skill levels, joystick or keyboard control. **$24.95**

BREAKEVEN. Examine the relationship between fixed costs, variable costs, prices and discounts, on a specific project or product and to establish the resulting profit, loss and breakeven point. **$24.95.**

MAIL-IT 64. Mail-It 64 is an easy to use mailing list/label program designed for the 64. Requirements — Datasette and/or 1541 disk drive — VIC or RS232 printer. **$24.95**

STOCKMASTER 64. Stockmaster 64 is an inventory control program. Tape or diskette. Printer optional. **$24.95**

SUPER SPRITE. Sprites are an amazing feature of the Commodore 64; Super Sprite makes this so much easier, by allowing you to draw and edit sprites on a large screen the data can then be saved on cassette or diskette. Price — Tape **$24.95: Diskette $34.95**

TRIP & PARTY PLANNERS 64. 2 programs which will help you to accurately plan what costs are likely to be for your next trip or party. **$24.95**

JUMPMAN. See Review. $89.00 Disk or Cassette.

FROGGER. See Software Review. **$84.50 Disk Only.**

SWORD OF FARGOAL. Adventure at the highest level. Sound, graphis, hours of fun. **$74.00.** See Software Review. Disk or cassette.

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Educational
TURTLE GRAPHICS. David Malmberg's Turtle Graphics which utilizes the full graphic features of the Commodore 64. Create colourful and artistic pictures while painlessly learning all the basics of programming. **$129**

RETRO BALL™ by Alick Dziabczenko is a computer enhanced simulation of Air Hockey, featuring all the excitement and challenge of the original. Retro Ball™ offers either a computer opponent or the option of a two-player game. Either opponent can be handicapped to increase the challenge. $89.00.
$89

6502/6510 PROFESSIONAL DEVELOPMENT SYSTEM. A cassette based assembler package offering a one or two pass assembler that uses standard MOS mnemonics and operand formats. **$89**

HESMON 64™ is an adaptation of the popular HESMON cartridge for the Commodore 64. HESMON is a 6502/6510 machine language monitor, with a mini-assembler, that is indispensible for all assembly language programmers. **$89**

HESWRITER 64™ is a sophisticated time-saving word processor based upon the unique HESWRITER. Includes full screen editing, justification, centering, page headers and page numbering. Compatible with all Commodore printers or any IEEE compatible printer. **$95**

Educational
BENJI'S SPACE RESCUE™ Join America's favourite canine hero on a journey through the solar system on a search for kidnapped scientists. Discover the wonders of our solar system as you and Benji battle aliens and use your knowledge to rescue the scientists. **$89**

MOON DUST $89 See Software Review, P. 20.

TRASHMAN — Cartridge $89
Pacman type.

SNAKE BYTE $89 A large apple eating snake at your control, with every apply it grows longer. Watch out for the plums!! A much better game that it sounds with different levels of skill.

Title: Crush, Crumble & Chomp — Type: Diskette $73 When a program is accompanied by a 46 page booklet it's reasonable to assume that it's no ten minute wonder!

Title: Neutral Zone — Type: Cassette — Supplier: Access Software
$79 This game takes you to the outer edge of our galaxy. You are assigned to a perimeter gunnery pod to protect Alpha IV, a long-range early-warning station whose mission is to detect alien intruders. Engage the attack computer and prepare youself to take on a squadron of homicidal, even suicidal, aliens.

Your survival and the future of earth will depend on your quick wits and split second reation.

PAKACUDA, APE CRAZE, CENTROPODS, ESCAPE, MCP. See Software Review, P. 20 Nov '83. **$39**

Title: Moondust — Type: Cartridge — Price: $89.50. And now for something completely different! A game that reduces stress! A real gem from Creative Software. Hauntingly beautiful visuals (it is suggested that you turn the colour controls on your TV right up) and totally original electronic music combine to produce a work of art. Indeed, in my mind the game is secondary to beauty! If you've ever wanted a showpiece of just what state-of-the-art computer graphics and sound are all about, then this is for you. Place a 'seed' with your spaceman and attempt to drag it to centre screen with your spacecraft. Totally non-aggressive. Four different game options. Joystick required.

Title: 6502 Professional Development System — Type: Cassette
$72 Hesbal & Hesedit in one package. Serious programmers read on! Hesbal is a one or two pass 6502/6510 assembler that uses standard MOS mnemonics and operand formats. It has several pseudo-opcodes and over 25 error messages. Full instructions included and use of printer is provided for.

Hesedit is powerful full-screen text editor like those used on large computers to increase programmer productivity. Use it to prepare input to Hesbal, or by itself to create and maintain a variety of files. Features include: easy change of one or more lines at a time, forward and backward paging. LOAD & SAVE complete or partial files, forward & backward tabbing. Instructions are given so that source can be maintained on tape or disk and you have the option of using a printer.

BUSINESS SOFTWARE

See Business Review Page 10 Nov '83.

PERSONAL FINANCE	$125.00
THE FILING ASSISTANT	$1.49.00
BUSICALC	$ 99.00
VIZAWRITE	$140.00
BUSIWRITER	$125.00
DEBTORS	$250.00
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HARDWARE MAIL ORDER

Due to requests from you, the reader, about the availability of the Sega SC-3000, we have made arrangements through Grandstand Leisure (NZ) Ltd for a Xmas mail order special.

Sega SC-3000	$399.00
Basic II Cartridge .5K RAM	$ 39.95
Basic IIIa Cartridge 16K RAM	$110.00
Basic IIIb Cartridge 32K RAM	$150.00

GAMES: Congo Bongo. N-Sub. Safari Hunter	$59.95
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Texas TI 99/4A	$595.00
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BITS, BYTES AND BUZZWORDS

This new book educates business people in what they need to know before buying a computer.

Describes how computers and peripherals work in a general sense, then discusses that which is important to business people — what computers can do in a business environment, what software is and why it is significant to a business, what to look for in a business system and what all the terminology means to someone in the business world.

This is a slick reference for business people to find out what everyone is talking about.

$19.95

HOW TO BUILD A PROGRAM

This is one time it is not impolite to look over someone's shoulder. A comprehensive guide which allows a beginner to watch an experienced programmer during the development of an entire project; from the original idea through the building of a relatively complex program all the way to the final polishing.

The first of its kind, the book includes all the errors and bugs which usually occur during a programming project and ends each chapter with a concise list of the major points of that chapter. Examples abound, and are shown in both Microsoft BASIC and Pascal.

$43.95

HOW TO USE THE TIMEX SINCLAIR COMPUTER

Assumes new owners know nothing about computers in general or the Timex Sinclair specifically, and proceeds in a very comfortable way to explain what to expect and how to handly any problems encountered.

How to set the computer up, how to work it, and touches on how to program the cmputer in BASIC. A very practical guide.

by Rodnay Zaks 214pp., 100 illust., 26.95

YOUR FIRST COMPUTER

by Rodnay Zaks 285pp., 150 illustr., 19.95

The most popular introduction to small computers and their peripherals: what they do and how to buy one.

INTERNATIONAL MICROCOMPUTER DICTIONARY

120pp., 8.95

All the definitions and acronyms of microcomputer jargon defined in a handy pocket-sized edition. Includes translations of the most popular terms into ten languages.

YOUR TIMEX/SINCLAIR 1000™ AND ZX81™

by Douglas Hergert 159pp., illustr., 15.95

THE TIMEX/SINCLAIR 1000™ BASIC HANDBOOK

by Douglas Hergert 170pp., illustr., 17.95

A complete alphabetical listing with explanations and examples of each word in the T/S 1000 BASIC vocabulary; will allow you quick, error free programming of your T/S 1000.

TIMEX/SINCLAIR 1000™ BASIC PROGRAMS IN MINUTES

by Stanley R. Trost 150pp., illustr., 17.95

A collection of ready-to-run programs for financial calculations, investment analysis, record keeping, and many more home and office applications. These programs can be entered on your T/S 1000 in minutes!

MORE USES FOR YOUR TIMEX/SINCLAIR 1000™

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■

Dear Computer Input People,

On Page 17 (Software Input) I found 11 mistakes in the "Sea Battle" program. They are that the "print tab" commands are wrong. E.G. On line 40 is the first of the 11 mistakes.

40 PRINT TAB (0,23)"—"

There should be no gap in between "TAB" and the (0,23). This mistake stops the program running.

The following line-numbers are the rest of the mistakes I found:

Lines 70, 80 (2), 120, 190, 200, 212, 255, 325, 480, 510

Shane Minnear
TEMUKA

ED: $10 on the way Shane.

Dear Sir,

I read with interest the $10 reward for spotting a mistake in a program listing (a mistake that will stop the program running as it should). I claim to have found such an error. An error of judgment on your part. The listing of the program "Assault Craft" is so small and faint that I could not read it, even with a magnifying glass. This definitely stops the program running on our machine. I am looking forward to receiving your letter.

Mark Finnie
MOSGIEL

ED: $10 is on the way to you Mark. (If nothing else than for pure cheek)

Dear Sir,

I have found a bug in the ZX81 game 'Artful Dodge.' In the listing there is a bug which disallows the movement of the blob to move " "

Could you please send me a copy of the ZX81 game 'Assault Craft' because I found the listing so small, it was practically impossible to read.

I think your magazine is very good, and I look forward to the next issue. I hope you publish more ZX81 games.

Blair Corbett (12)
MURRAY'S BAY

ED: $10 on the way. Well spotted Blair.

Dear Sir,

Hello, and welcome to the New Zealand computer scene. It is good to see another local magazine get underway, and I wish you all the very best. I like the interactive format of "Computer Input" and feel this is a good way to ensure something for everyone.

However, I noticed some teething problems in your first edition. You stated in the Software Input column that the name of the computer should be included with all submissions, but then broke the rule yourself. I'm guessing that the Input on Page 16 is for VIC20; "Tunnel Vision" on Page 17 is for a PET; "Artful Dodger" on Page 18 is for ZX81; "Deaf Ender" (what a terrible pun!) on Page 20 is for some sort of Commodore?

And only by reading very carefully did I find that "Colour Border" and presumably "Half-Screen Invert" are for the VIC 20. Perhaps you could solve this problem by naming the computer next to the program's title?

The only other fault was that some of the listings were too small to be read easily. Apart from these minor faults, good work for producing a well laid out, clear and concise magazine.

S.A. Barrett
CHRISTCHURCH

ED: $10 on the way. What's wrong with "Deaf Ender"?

SOFTWARE INPUT

HANGMAN BY PAT POLAND

Dear Sir/Madam,

Please find enclosed a copy of a program I wrote, "Hangman," which I offer for publication.

The listings are error-free. I have run the program innumerable times. It has proved very popular with the children at my school, ranging from 7 to 12 years old. Interest in spelling and ability, has improved markedly.

For extra copies of my program, your readers could write to: P.J. Poland, Te Akau School, Ngaruawahia. Ph: 4777 Te Akau (School). Ph: 4770 Te Akau (Home).

Notes to accompany "Hangman":

1. The program is for a 16K Sinclair ZX81.
2. When entering the program, do not type in the letters in lower case in the brackets; they are only to help the programer.
3. Words listed can be easily changed; just delete the words in speech marks in the listing and add new ones.
4. Words whould be no longer than 9 (nine) letters in length.
5. If desired, more than 50 words can be listed (memory permitting). E.G. To have 15 words in the "VERY EASY" routine, alter the following:
   (i) LINE 150 DIM A$ (15,9)
   (ii) LINE 970 FOR L=1 TO 15
   (iii) LINE 985 FOR P=1 TO 15
   (iv) LINE 900 LET B$=A$ (INT (RND*15)+1)
6. The game can be played using different languages. E.G. Maori, French.
7. If short of memory delete:
   (i) the REM statements;
   (ii) the WELCOME routine (this could be written on paper if needed).

```
 4  LET MS =0
 6  LET YS =0
10  REM WELCOME ROUTINE
20  PRINT AT 10,6;"WELCOME TO HANGMAN"
30  PAUSE 200
40  CLS
50  PRINT AT 8,0;"TRY TO GUESS THE MYSTERY WORD.",
    "YOU WILL BE ALLOWED 9 INCORRECT","GUESSES
    BEFORE YOU ARE HUNG."
60  PAUSE 400
70  CLS
80  PRINT AT 10,0"WHEN YOU THINK YOU KNOW THE",
    "MYSTERY WORD, TYPE 1."
90  PAUSE 200
100 CLS
105 LET W=0
110 REM WORD LIST
120 PRINT AT 8,0;"WHAT LEVEL WOULD YOU LIKE:",TAB 6;"1.
    VERY EASY",TAB 6;"2.EASY",,TAB 6;"3.RIB TICKLER",
    TAB 6;"4.SKULL CRACKER",TAB 6;"5.NECK STRETCHER"
130 INPUT Q
132 IF Q=1 THEN GOTO 150
```

To page 28 ▷

SOFTWARE INPUT

```
134  IF Q=2 THEN GOTO 300
136  IF Q=3 THEN GOTO 450
138  IF Q=4 THEN GOTO 600
140  GOTO 750
150  REM VERY EASY
155  DIM A$(10,9)
160  LET A$(1)="CAT"
165  LET A$(2)="DOG"
170  LET A$(3)="MAT"
175  LET A$(4)="RUG"
180  LET A$(5)="LOG"
185  LET A$(6)="BUG"
190  LET A$(7)="FIT"
200  LET A$(8)="SIT"
205  LET A$(9)="PAT"
210  LET A$(10)="SAT"
220  GOTO 900
300  REM EASY
305  DIM A$(10,9)
310  LET A$(1)="HELP"
315  LET A$(2)="KNEW"
320  LET A$(3)="COST"
325  LET A$(4)="HELD"
330  LET A$(5)="PORT"
335  LET A$(6)="TALK"
340  LET A$(7)="DUTY"
350  LET A$(8)="ROLE"
355  LET A$(9)="WORK"
360  LET A$(10)="MARK"
370  GOTO 900
450  REM RIB TICKLER
455  DIM A$(10,9)
460  LET A$(1)="PRINT"
465  LET A$(2)="BASIC"
470  LET A$(3)="SERIES"
475  LET A$(4)="GNAT"
480  LET A$(5)="GNU"
485  LET A$(6)="PAPER"
490  LET A$(7)="YEARS"
495  LET A$(8)="BREAK"
500  LET A$(9)="INPUT"
550  LET A$(10)="COMING"
510  GOTO 900
600  REM SKULL CRACKER
605  DIM A$(10,9)
610  LET A$(1)="DATABASE"
615  LET A$(2)="CONTACT"
620  LET A$(3)="PLEASED"
625  LET A$(4)="DELETE"
630  LET A$(5)="ENGLAND"
635  LET A$(6)="EDITORIAL"
640  LET A$(7)="AGAINST"
645  LET A$(8)="GLOSSARY"
650  LET A$(9)="REQUEST"
655  LET A$(10)="PERSONAL"
660  GOTO 900
750  REM NECK STRETCHER
755  DIM A$(10,9)
760  LET A$(1)="XYLOPHONE"
765  LET A$(2)="SPECIALLY"
770  LET A$(3)="PROCESSES"
775  LET A$(4)="VENUES"
780  LET A$(5)="ANNOUNCED"
785  LET A$(6)="AUCKLAND"
790  LET A$(7)="REPRESENT"
795  LET A$(8)="INQUIRIES"
800  LET A$(9)="POSITION"
805  LET A$(10)="MAGAZINE"
900  LET B$=A$ (INT (RND*10)+1)
910  CLS
920  REM PRINT LETTERS AT TOP
925  LET C$="ABCDEFGHIJKLMNOPQRSTUVWXYZ"
930  PRINT AT 0,3;C$
932  PRINT AT 16,1;"——————————" (i.e. 9 dashes)
935  REM INPUT GUESS
940  PRINT AT 18,0;"INPUT A LETTER:"
945  INPUT E$
950  IF E$="1" THEN GOTO 2000
955  PRINT AT 18,0;"                " (i.e. 16 spaces)
960  LET R=CODE E$
965  PRINT AT 0,R−35;"▄" (i.e. 1 space graphics)
970  FOR L=1 TO 9
975  IF E$=B$(L) THEN PRINT AT 15,L;B$(L)
980  NEXT L
985  FOR P =1 TO 9
990  IF E$=B$(P) THEN GOTO 940
995  NEXT P
1000 REM DRAW GALLOWS
1005 LET W=W+1
1010 IF W=1 THEN GOTO 1050
1015 IF W=2 THEN GOTO 1100
1020 IF W=3 THEN GOTO 1150
1025 IF W=4 THEN GOTO 1200
1030 IF W=5 THEN GOTO 1250
1035 IF W=6 THEN GOTO 1300
1035 IF W=7 THEN GOTO 1400
1045 IF W=8 THEN GOTO 1500
1048 IF W=9 THEN GOTO 1600
1050 FOR G =40 TO 60
1060 PLOT G,36
1070 NEXT G
1080 GOTO 940
1100 FOR G=36 TO 6 STEP−1
1110 PLOT 60,G
1120 NEXT G
1130 GOTO 940
1150 FOR G=36 TO 30 STEP −1
1160 PLOT 48,G
1170 NEXT G
1180 GOTO 940
1200 PRINT AT 7,23;"▄"(i.e. 3 graphics spaces);AT 8,23;"▄▄ "(i.e. graphics: shift W space shift Q); AT 9,24; "▄"(i.e. 1 graphics space)
1210 GOTO 940
1250 PRINT AT 10,23;"▄"(i.e. 3 graphics spaces);AT 11,23;"▄"(i.e. 3 graphics spaces);AT 12,23;"▄"(i.e. 3 graphics spaces)
1260 GOTO 940
1300 LET V=18
1310 FOR H=46 TO 40 STEP−1
1320 PLOT H,V
1330 LET V=V−1
1340 NEXT H
1350 GOTO 940
1400 LET V=17
1410 FOR H=52 TO 57
1420 PLOT H,V
1430 LET V=V−1
1440 NEXT H
1450 GOTO 940
1500 LET V=24
1510 FOR H=45 TO 39 STEP −1
1520 PLOT H,V
1530 LET V=V+1
1540 NEXT H
1550 GOTO 940
1600 LET V=24
1610 FOR H=52 TO 58
1620 PLOT H,V
1630 LET V=V+1
1640 NEXT H
2000 REM PRINT WORD
2010 CLS
2020 PRINT AT 10,6;"THE MYSTERY WORD IS:";AT 12,12;B$
2030 PRINT AT 14,2;"DID YOU GUESS CORRECTLY?(Y/N)"
2040 INPUT Z$
2050 IF Z$="Y" THEN LET YS=YS + 1
2060 IF Z$="N" THEN LET MS =MS +1
2070 IF Z$="Y" THEN GOTO 2500
2100 REM I WIN ROUTINE
2110 CLS
2120 FOR V=3 TO 19 STEP 2
2130 PRINT AT V,V;"I WIN" (in graphics mode)
2140 NEXT V
2145 PAUSE 200
2150 GOTO 3000
2500 REM YOU WIN ROUTINE
2510 CLS
2520 FOR P=1 TO 19 STEP 2
2530 PRINT AT P,8;"CURSES. YOU WIN." (in graphics mode)
2540 NEXT P
2550 PAUSE 200
3000 REM SCORE
3010 CLS
3020 PRINT AT 8,4;"YOUR SCORE =";YS
3030 PRINT AT 10,6;"MY SCORE =";MS
3040 PRINT AT 14,4;"ANOTHER GAME? (Y/N)"
3050 INPUT Y$
3060 IF Y$="Y" THEN GOTO 100
3070 STOP
```

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SOFTWARE INPUT

Dear Sir(s),

Having complained about your VIC 20 programs in #2, I suppose I should help if I can!

Herewith a small unsophisticated program to print labels. The format can be changed easily by changing lines 10, 50, 54, 105, 163, 180 to suit individual requirements. (Change DIMs and add PRINTs, etc.)

I have used the original toprint numbered labels which were stuck to business cards and thus made an admission/quick-draw raffle ticket. Who knows? You might put the printers out of business!

R. Keith Cook
INVERCARGILL

```
  REM*** LABELS ***
2 REM** BY R.K.C.**
3 REMTRANS.FROM THE
4 REM*** OFFICE ***
5 REM**** WANG ****
6 REM** PROGRAM  **
7 REM**BY G.R.G. **
8 REMTHIS FORMAT FITS       'QUICKSTIK LABEL          15/16X4 1/16
9 REM*  R/W 1565/1  *       ****************
10 DIMA$(32),B$(32)
30 POKE36869,242:PRINT"□"
40 A=0
43 PRINT"LINE FOR EXP. PRINT":INPUTE
44 N=0:PRINT
45 INPUT"NO.REQUIRED";N:PRINT
47 PRINT"TYPE '@' TO END ENTRY":PRINT
48 PRINT"5 LINES MAXIMUM":PRINT
50 A=A+1:L=32:IFA>5THEN90
53 PRINT"LINE NO.";A
54 IF A=ETHENL=16
60 INPUT"TEXT:";B$:IFB$="@"THEN90
61 IFLEN(B$)>LTHENPRINT"TOO LONG!":GOTO54
65 A$(A)=B$
70 GOTO50
80 A=0:GOTO50
90 PRINT"TYPE '-1' TO SEE -   -'-2' TO PRINT"
95 GETZ$:IFZ$=""THEN95
96 IFZ$="■"THEN100
97 IFZ$="■"THEN150
98 IFZ$<>"■"ORZ$<>"■"THEN95
100 FORI=1TO5
105 T=(32-LEN(A$(I)))*0.5
110 PRINTTAB(T);A$(I)
120 NEXT
130 GOTO95
140 C=0
150 A=FRE(0):CLOSE4:OPEN4,4,7:CMD4
160 C=C+1:PRINTTAB(25);C:FORI=1TO5
163 T=(32-LEN(A$(I)))*0.5
165 IFI=ETHENGOSUB200:PRINTCHR$(14);TAB(T);A$(I);CHR$(15):GOTO175
170 PRINTTAB(T);A$(I)
175 NEXT
180 X=X+1:IFX=>NTHENPRINT#4:CLOSE4:INPUT"MORE?  Y/N";R$:IFR$="N"
    THENSTOP
190 GOTO150
200 T=INT((2*T-(LEN(A$(I))))/4):IF T<1THENT=1
210 RETURN

READY.
```

```
this is a test
of patience
& LABELS
in the
PRINTER
```

SHOOT OUT IS WRITTEN FOR THE ZX-81 AND DEMONSTRATES THE GRAPHICS CAPABLE WHEN THE SCREEN IS PLANNED. THE OBJECT OF THE GAME IS TO SHOOT THE INVERSE STAR. THIS IS DONE BY FIRST PRESSING D TO DRAW AND THEN F TO FIRE.

TONY STEWART,
MASTERTON.

```
  1 LET X=5
  2 LET Y=5
  3 LET I=0
  4 LET U=128
  5 LET S=0
  6 LET O=0
 10 PRINT "                    SHOOT OU
T                "
 15 GOSUB 400
 20 IF I=0 THEN GOSUB 200
 21 LET U=U+1
 22 PRINT AT X+2,29;CHR$ U
 23 IF U=191 THEN LET U=127
 30 IF INKEY$="D" THEN GOSUB 10
0
 35 LET I=I+1
 36 IF I=30 THEN LET I=0
 40 IF INKEY$="F" THEN GOSUB 30
0
 99 GOTO 20
100 PRINT AT X-1,Y;"   ";AT X,Y;
"  ";AT X+1,Y;"  ";AT X+2,Y;
"  ";AT X+3,Y;"  ";AT X+
4,Y;"  ";AT Y+5,Y;"  ";AT X+
6,Y;"  ";AT X+7,Y;"  "
106 LET I=0
107 LET K=1
110 RETURN
200 PRINT AT X-1,Y;"   ";AT X,Y;
"  ";AT X+1,Y;"  ";AT X+2,Y;
"  ";AT X+3,Y;"  ";AT X+4,
Y;"  ";AT Y+5,Y;"  ";AT X+6,
Y;"  ";AT X+7,Y;"  "
207 LET K=0
210 RETURN
300 IF K<>1 THEN RETURN
301 FOR N=Y+5 TO 25 STEP 2
310 PRINT AT X+2,N;"  ."
320 NEXT N
321 PRINT AT X+2,25;"  "
322 PRINT AT X+2,29;". "
325 IF U=151 THEN LET S=S+1
326 PRINT AT 20,10;"SCORE=";S
327 LET O=O+1
330 GOSUB 200
335 GOSUB 400
337 IF O=10 THEN PRINT AT 11,10
;"GAME OVER";CC
340 RETURN
400 PRINT AT X-1,25;"          ";AT
X,27;"  ";TAB 27;"  ";TAB
27;"  ";TAB 27;"  ";TAB 2
7;"  ";TAB 27;"  ";TAB 27;
"  "
410 RETURN
500 SAVE "SHOOT OU■"
501 RUN
```

SHOOT OUT

SOFTWARE INPUT

Dear Sir,

I have just purchased your new magazine and I am pleased to see a NZ publication that has a selection of programs available for a number of different computers. With the knowledge that no magazine is able for very long to do this without people writing in, I thought I would sent in this modified C64 version of your original VIC 20 listing from the Oct magazine.

The program scrolls the top six lines on the screen of the C64 from left to right, as opposed to eleven lines on the VIC 20. The rest is as the VIC 20 program which leaves the top of the screen blank and all that was there is now lost.

B.R. Brodie
TOKOROA

```
  1  ****************************
  2  REM*  SIX LINE SCROLL  *
  3  REM*  REVISED FOR C64  *
  4  REM*  BY BRUCE BRODIE  *
  5  REM ************************
 10  READL
 20  READA$
 30  IFA$="*"THEN END
 40  A=ASC (A$)-48
 50  B=ASC (RIGHT$(A$,1))-48
 60  N=B+7*(B>9) +
     (16*(A+7*(A>9)))
 70  POKEL,N:L=L+1
 80  GOTO 20
100  DATA 832,A2,F1,BD,FF,03,
     9D,00,04,CA,D0,F7,A9,06,
     A2,F2,9D,FF,D7,CA,D0,FA
110  DATA A9,20,A2,00,9D,00,
     04,9D,28,04,9D,50,04,9D,
     50,04,9D,78,04,9D,A0,9D,
     C8,04,60,*
```

Dear Sir,

Enclosed is a program for a ZX Spectrum that will draw in any colour you choose, move the plot point to any position, and will also erase. Using the keys u, i, o, p will give you left, up, down and right respectively; keys q, w, e, r will give you diagonal movement. If you require a faster speed and/or a dotted line for 'hidden detail,' keys h, j, k, l, a, s, d, f correspond to the directions above. Key 9 will tell you whether you are in Draw, Move, or Erase mode by flashing. Any of the colour keys will change the ink colour.

The finished picture can always be saved by using Screen$. We used the program to design a factory for my brother-in-law. It is also a fun program for young children to experiment with.

I am 13-years-old and was given a ZX Spectrum in September. I find your magazine very interesting and it's great to see what is happening in NZ and to have NZ adverts. The competitions are also an incentive to produce a finished program.

By the way, I did not include a routine to prevent the plot point from going off screen as I thought the program was getting a bit long. Another improvement would be routine to change the plot point to a larger graphic if preferred or for special effects. Circles can always be drawn in by using a direct command.

Andrew Scrivener
MT MAUNGANUI

```
  1 REM ** by A. SCRIVENER **
  2 GO SUB 7000: REM ***** INST
RUCTIONS *****
 10 REM *** A PLOT SKETCH PROG
RAM ***
 20 GO SUB 8000
 30 IF c=1 THEN OVER 1
 40 PLOT INK z;x,y: LET a=x: LE
T b=y
 50 LET x=x+(INKEY$="p")+(INKEY
$="w")+(INKEY$="e")-(INKEY$="u")
-(INKEY$="q")-(INKEY$="r")
 55 LET y=y+(INKEY$="i")+(INKEY
$="e")+(INKEY$="r")-(INKEY$="o")
-(INKEY$="q")-(INKEY$="w")
 56 LET x=x+(4 AND INKEY$="l")+
(4 AND INKEY$="s")+(4 AND INKEY$
="d")-(4 AND INKEY$="h")-(4 AND
INKEY$="a")-(4 AND INKEY$="f")
 57 LET y=y+(4 AND INKEY$="j")+
(4 AND INKEY$="d")+(4 AND INKEY$
="f")-(4 AND INKEY$="k")-(4 AND
INKEY$="a")-(4 AND INKEY$="s")
 60 PLOT INVERSE (c=2); INK z;a
,b
 70 LET s$=INKEY$
 80 IF s$>="0" AND s$<="7" THEN
 LET z=VAL s$
```

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sample programs

BCIRCLE

```
10 SCREEN2,2:CLS:COLOR15
 20 FOR R=10TO90 STEP 10
 30 C=INT(RND(1)*16)
 40 CIRCLE(128,96),R,C,1,0,1,
 50 NEXT R
 60 FOR I=90 TO 10 STEP-10
 70 BCIRCLE(128,96),I,,1,0,1
 80 NEXTI
100 GOTO 20
```

SPRITE SAMPLE PROGRAM

```
10 M=1
20 SCREEN 2,2:CLS
30 MAG M:C=RND(1)*13+1
 40 CURSOR 10,10:PRINT CHR$(17);"MAG";M
 50 FOR Y=0 TO 191 STEP 4
 60 PATTERN S#0,"00193F3C1C0D0F7B"
 70 PATTERN S#1,"0C0F0F0F07031B07"
 80 PATTERN S#2,"00CCFE9E9CD878EC"
 90 PATTERN S#3,"1AFAF8F0EC7C3800"
100 Y1=Y:GOSUB 200
110 PATTERN S#0,"00193F3C1C0D0F1B"
120 PATTERN S#1,"2C2F0F071B1F0E00"
130 PATTERN S#2,"00CCFE9E9CD878EF"
140 PATTERN S#3,"18F8F8F8F0606C70"
150 Y1=Y+2:GOSUB 200
160 NEXT Y
170 M=M+2:IF M>3 THEN M=1
180 GOTO 20
200 SPRITE 0,(120,Y1),0,C
210 SPRITE 0,(120,Y1+1),0,C
220 RETURN
```

PAINT

```
10 SCREEN2,2:CLS
20 FOR I=0 TO 255 STEP 20
30 LINE(I,0)-(I,191),15:NEXTI
40 FOR I=0 TO 191 STEP 20
50 LINE(0,I)-(255,I),15:NEXTI
60 C=INT(RND(1)*16)
70 X=INT(RND(1)*256):Y=INT(RND(1)*192)
80 PAINT(X,Y),C
 90 GOTO 60
```

LINEBF

```
 10 SCREEN 2,2:CLS
 20 A=INT (RND(1)*16)
 30 B=INT(RND(1)*128):C=INT(RND(1)*96)
 40 D=INT (RND(1)*256):E=INT(RND(1)*192)
 50 LINE(B,C)-(D,E),A,BF
100 GOTO 20
```

LINE

```
 10 SCREEN2,2:CLS:COLOR,15
 15 FOR I=0T030
 20 A=INT(RND(1)*16)
 30 B=INT(RND(1)*128):C=INT(RND(1)*96)
 40 D=INT (RND(1)*256):E=INT(RND(1)*192)
 50 LINE(B,C)-(D,E),A,B
 55 NEXTI
100 GOTO 10
```

CHECKERED PAINT

```
 10 SCREEN 2,2:CLS
 50 X=10:Y=10:XX=250:YY=190
100 REM VERTICAL LINE
110 FOR I=1 TO 12
120 LINE (X,Y)-(X,YY),1
130 X=X+20
140 NEXT I
200 REM HORIZONTAL LINE
210 X=0
220 FOR I=1 TO 10
230 LINE (X,Y)-(XX,Y),1
240 Y=Y+20
250 NEXT I
300 REM PAINT
310 A=RND(1)*240
320 B=RND(1)*185
330 C=RND (1)*15
340 PAINT (A,B),C
350 GOTO 300
```

GENIE INPUT

Olwen Williams

From page 22

BOOK REVIEW

MASTERING THE COLOUR GENIE Ian Sinclair (Granada) $19.95.

This book has the field to itself, at least at present. Even if there were a number of other books to choose from I feel that it would still be a valuable book for Colour Genie owners to purchase. It assumes no knowledge of computers or even of tuning a television set and takes you through setting the machine up, turning the TV and goes on to teach programing.

For the complete novice this book is a much better introduction to the Color Genie than the user manuals. It takes you through the features, building up knowledge as you go. It has plenty of useful examples to key in to practise what it is teaching, and it teaches sound programing practice.

This is not a book only for the novice, however. The information in it goes beyond the BASIC manual, and an excellent index means that this book should be beside every Colour Genie.

Motten (Cassette): $29.95.

An arcade-style game of the space invaders genre. This one features swarms angrily buzzing fluttering moths moving back and forth across the screen. They don't all move at exactly the same speed, however, and they may hide behind others. The fire both straight down, and on an angle. They also have a kamikaze instinct and may dive towards you. As the game goes on THEY don't get any faster, but you will need to as they become increasingly more aggressive with each round.

This game features excellent use of the programmable character features of the Colour Genie. When you hit a moth it produces a satisfying bang, and bursting moth image, while when they get you there is an explosion as your laster flies apart.

There are bonus lasers (lives) each 1500 points, and if you make it to the top five you are awarded a bonus based on the percentage of hits/shots fired, and you are given an analysis of this.

I feel that this game would appeal to the whole family.

Visual	****
Sound	****
Programme	****
Difficulty	***
Overall	****

EIS (Cassette) $29.95.

This is similar to a game called "Pengo" which is sometimes found in arcades. In my opinion, this one is a better game.

The setting is an ice warehouse. Monsters roam around, melting ice blocks and will kill you if you connect with them. In turn you can kill them by pushing iceblocks at them. You have a limited time to do this before you freeze up and lose one of your lives. Each round produces more monsters, but there are never more than four active at one time. You get a bonus based on the time taken when you clear all the monsters in a particular round.

This game requires clear thinking as much as it requires good reactions. I found it disconcertingly easy to panic and rush into the nearest monster, but practice improved matters somewhat, and in my desire to improve I became quite addicted to the game. I liked the plopping sound of dying monsters and the visual effects achieved. Melting ice blocks in this game are good examples of animation using some of the best programmable graphics I have seen for the Colour Genie.

Visual	*****	**Difficulty**	****
Sound	****	**Overall**	****
Programme	****		

USERS' GROUP

Anyone interested in forming a Users' Group please write to me at:

Enclose your name and address and phone number.
Let me know what you expect from a Users' Group.

P.O. Box 5056,
Wellesley Street,
Auckland. ■

TEN-YEAR-OLD WINS SINCLAIR COLOUR COMPUTER

Ten-year-old Aaron Armstrong of Pakuranga is now the proud owner of a super new Sinclair ZX Spectrum Colour Computer plus introductory software cassette. Aaron entered David Reid Electronics' 'Codebreaker' Competition in September and his entry was just one of over 3500 entries received by David Reid Electronics from all over New Zealand. Apart from the massive 'Codebreaker' mail that poured into Reid's head office in Auckland, entries were received at their ten Electronics Supermarkets nationwide and at over 200 computer stockists throughout the country.

To break the code, contestants had to select four keys on the ZX Spectrum Colour Computer (the keyboard was illustrated on the entry form) and match exactly the winning combination — determined by computer of course — and post entries no later than 30th September, 1983.

The photograph show Aaron taking delivery of first prize from Roger Sutherland the National Sales Manager of David Reid Electronics at Computer World. Looking on is Gail Rihini, Manager of Computer World in Victoria Street, Auckland. ■

SOFTWARE INPUT

From page 31

```
  90 IF s$="9" THEN PRINT AT 0,c
*6; FLASH 0; OVER 1; INVERSE 0;"
      ": LET c=c+1-(5 AND c=2): P
RINT AT 0,c*6; FLASH 1; OVER 1;
INVERSE 0;"      "
 100 OVER 0: GO TO 30
7000 LET i$="COLOUR PLOT"
7001 FOR a=1 TO 11
7002 PRINT AT 10,a+8; INK 1;i$(a
): BEEP .05,RND*30
7003 NEXT a
7004 PAUSE 100
7005 CLS
7008 PRINT AT 5,0; INK 1;"
   COLOUR PLOT                ";AT
5,9; OVER 1;"                 ";AT 8,0
;"KEYS ARE:","P - RIGHT","O - DO
WN","I - UP","U - LEFT"
7010 PRINT AT 9,15; INK 1;"9 - D
OWN LEFT";AT 10,15;"W - DOWN RIG
HT";AT 11,15;"E - UP RIGHT";AT 1
2,15;"R - UP LEFT"
7020 PRINT AT 14,10; INK 2;"FAST
 MODE"
7030 PRINT AT 16,0; INK 2;"L - R
IGHT";TAB 15;"A - DOWN LEFT"
7040 PRINT INK 2;"K - DOWN";TAB
15;"S - DOWN RIGHT"
7050 PRINT INK 2;"J - UP";TAB 15
;"D - UP RIGHT"
7060 PRINT INK 2;"H - LEFT";TAB
15;"F - UP LEFT"
7070 PRINT AT 0,0; INK 2;"Press
 '9' TO CHANGE MODE FROM   DRAW T
O ERASE OR MOVE"
7080 PRINT INK 1;"Press colour k
eys when drawing  to change colo
ur of line"
7100 PRINT #1;"PRESS ANY KEY TO
START"
7400 PAUSE 0
7500 RETURN
8000 LET x=127: LET y=87: LET i=
0: LET c=0
8010 BORDER 7: PAPER 7: INK 0: C
LS
8050 PRINT FLASH 1;"DRAW."; FLAS
H 0;" MOVE. ERASE"
8060 PLOT 0,0: DRAW 255,0: DRAW
0,175: DRAW -255,0: DRAW 0,-175
8070 RETURN
```

COLOUR GENIE

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VIC 20

BBC

TEXAS INSTRUMENTS

sinclair ZX Spectrum

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SOFTWARE INPUT

Dear Sir,

Congratulations! You have succeeded in publishing a magazine that a mere Mum can read and understand.

I wonder if you could publish some information on courses available for lady computer people. I have just finished the Computer Awareness course at Kapiti College, which was excellent, and would like to continue with the programming, however, I have been unable to find something between beginners and professional courses.

I would also like to know if anyone in New Zealand is marketing home-grown software as I am working on several maths programs for 5 and 6 year olds.

I have included two amusing little programs which may interest your readers. Both are for ZX81/16K.

Patricia A. Hopkins
PAEKAKARIKI

Leave first line of each string blank otherwise you are left with a screen-full of ears!!

```
10 REM "DOG"
20 LET A$="
```

```
"
30 LET B$="
```

```
"
35 FOR C=0 TO 15
40 FOR D=0 TO 30
50 PRINT AT C,D+1;A$;AT C,D;B$
60 NEXT D
70 NEXT C
80 CLS


10 REM "XMAS"
20 LET A$="
```

```
MERRY      CHRISTMA
"
30 LET B$="
```

```
MERRY      CHRISTMA
"
40 FOR I=1 TO 100
50 PRINT AT 0,8;A$
60 PRINT AT 0,8;B$
70 NEXT I
```

If you want a continuous loop, delete 40, change 70 to GOTO 50.

Dealer enquiries invited.

"Whitcoulls 21 Computer Centres throughout N.Z.

BBC MICRO-COMPUTER SYSTEM

The BBC Microcomputer can genuinely claim to satisfy the needs of novice and expert alike. It is a fast, powerful system generating high resolution colour graphics and which can synthesise music and speech. The keyboard uses a conventional layout and electric typewriter "feel."
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CLUB INPUT

BBC MICRO COMPUTER

The computer specifically designed for education, home, and office.

Specified by British Broadcasting Corporation engineers, the BBC Microcomputer has featured in two television series produced as part of the BBC Computer Literacy Project, and has been recommended by educational authorities in the UK and Australia as the computer for primary and secondary schools.

Processor: 2 MHz 6502A

Memory: 32K RAM 16K ROM BASIC 16K ROM Operating System

Keyboard: 73 key full QWERTY layout, including 10 user definable function keys, 4 cursor control keys, two key rollover and auto repeat.

Display: Mixed high resolution graphics and upper and lower case text.
Full colour on all 8 display modes:

640x256 2 colour graphics 80x32 text
320x256 4 colour graphics 40x32 text
160x256 16 colour graphics 20x32 text
80x25 2 colour text
320x256 2 colour graphics 40x32 text
160x256 4 colour graphics 20x32 text
40x25 2 colour text
40x25 Teletext display

VHF, composite video and separate RGB and Sync outputs.

External Storage: 300 baud and 1200 baud interface (with motor control) for standard cassette recorders.

Tone Generation: Three-voice five octave music synthesis with full envelope control feeding internal loudspeaker.

Printer Interfaces: 8 bit plus full two-line handshake "Centronics" port.
75 baud to 9600 baud software selectable serial port to drive RS232 devices with full two-line handshake.

User Input/Output: 8 bit parallel input/output port.

Analogue Inputs: Four analogue inputs for games, paddles or control applications.

Expansion Capabilities: Within the computer (at extra cost)
Floppy Disk Interface
Econet Interface
Speech Synthesis
Cartridge ROM Pack Interface

Second Processor Option: The Computer is designed so that it can be expanded to run with a second processor and considerably expanded memory.

Expansion units which are connected via the "tube" include:
3 MHz 6502 with 60K RAM
Z80 with 60K RAM running CP/M
32 bit processor with 128K RAM.

Dear Mr Noble,

Thank you for your letter and October copy of **Computer Input**.

Your magazine has been enthusiastically read by members of our national committee, and we feel that **Computer Input** has a place on the NZ computer scene.

We feel that interest in computing in NZ can only be stimulated by local periodicals, and it is important to include the laypeople in the scope of articles and information you intent to present.

Thank you for the opportunity to provide input for a Club Page, and I enclose a copy of our current information handout. We would be happy for you to publish this in its present form, or with your editorial licence.

Please note that we are now an incorporated society and our stationary will soon be changed to include this.

With our present membership in excess of 250 and growing daily, we would be able to provide information for your suggested Club Page on a regular basis.

Our members include a large number of computer, scientific and engineering professionals who are capable of producing high quality soft and hardware.

We produce a monthly newsletter for members, and we will be informing them of the availability of your magazine.

Ian Linning (For Secretary of
The BBC Microcomputer
Users Group of NZ)
WELLINGTON

BBC USERS' GROUPS

As an enthusiastic group of users, we think the Beeb is one of the most versatile micros available. It is designed to grow with you, in terms of ease of expansion of memory, addition of peripherals and user-invented equipment; and has a well-structured BASIC. It is also one of the 5 micros recommended for use in NZ shools.

THE USERS GROUP — AIMS

1. To provide an independent forum within NZ for the exchange of information, ideas, experience and expertise.
2. To assist users to take advantage of the powerful capabilities of the BBC micro.

To page 39 ▷

NOW SHOWING!

BBC MICRO COMPUTER Programme Preview

DIGITAL FANTASIA

ADVENTURE GAMES
The Golden Baton
The Time Machine
Arrow of Death (pt 1)
Arrow of Death (pt 22)
Escape from Pulsar 7
Circus
Feasibility Experiment
The Wizard of Akyrz
Perseus & Andromeda
Ten Little Indians

PSION SOFTWARE
Vu-Calc (Database)
Vu-File (Spreadsheet)

ACORNSOFT

GAMES
Philosophers Quest
Sphinx Adventure
Monsters
Snapper
Planetoid
Arcade Action
Rocket Raid
Meteors
Arcadians
Super Invaders
Sliding Block Puzzles
Cube Master
Chess
Missile Base
Castle of Riddles
Countdown to Doom
Starship Command
Hopper
Snooker
Draughts & Reversi

EDUCATION
Business games
Tree of Knowledge
Algebraic Manipulation
Peeko Computer
Chemical Analysis
Chemical Simulations
Chemical Structures
Jars

GRAPHICS
Graphs & Charts
Creative Graphics

LANGUAGES
Lisp
Forth
BCPL

BUSINESS
Desk Diary
View

MOLYMERX

Jumbo
Shuttle
Disc Zap
Disc files

I.J.K.

GAMES
Star Treck/ Candy Floss
Family Games
Mutant Invaders/ Breakout
Beep-Beep (Super Simon)
Beepmunch
Super Hangman
Maze
Invaders
Wordpro
Atlantis
Flags
Hyperdrive
Stratobomber
Leap Frog
Pontoon/Patience
5-a-side Socca

MICRO POWER

ARCADE AND ACTION GAMES
Croaker
Munchyman
Wall
Killa Gorilla
Demon Decorator
Hell Driver
Danger! UXB
Cowboy Shootout
Escape from Moonbase Alpha

SPACE GAMES
Moonraider
Tunetrek
Galactic Commander
Maze Invaders
Astro Navigator
Star Trek
Alien Destroyers
Asteroid Storm
Laser Command
Spacemaze
Swoop
Alien Swirl

EDUCATION
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World Geography
Where?
Barrage
Junior Maths Pack
Constellation
Physics

APPLICATIONS AND UTILITIES
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Beebman
Draw
Disassembler
Micro/Budget

ADVENTURES
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Caveman Adventure
The labyrinths of La Coshe
Adventure
Eldorado Gold

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Reversi
Beeb Tote
Poker Dice
Code Breaker
Chess
Roulette
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BBC

Fun Games
Games of Strategy
Drawing
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The Computer Programs (vol 1)
The Computer Programs (vol 2)
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Early Learning
Home Finance
Canyon
Home Doctor
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CLUB INPUT

From page 37

3. Common interests — people with interest in business systems, educational, experimental and technical ideas are able to exchange views with other members.
4. Problem solving — the Users Group represents a large resource of skills, and can pool that knowledge.
5. Discounts — bulk buying has allowed some discounts on items.
6. Software – negotiations are proceeding which will licence us to distribute the excellent software produced by BEEBUG, the largest UK BBC Users Group.

THE NEWSLETTER

These aims are primarily focussed through the monthly newsletter.

This is 28 pages of programs, reviews of commercially available software, programing techniques, as well as the means for setting up special interest applications (business, education, radio hams . . .)

It also offers solutions to members' problems, hints and ideas, plus information on local groups, discounts, etc.

LOCAL USERS GROUPS

Auckland: 2nd Wednesday of the month, VHF Clubrooms, Hazel Ave, Mt Roskill. Ph: Dave Fielder 770-630 x 518 (Bus).

Wellington: Last Thursday of the month, 7.30 p.m. Staffroom, Correspondence School (first floor), Portland Cres. Ph: Anton 286-289 (Res).
Christchurch: Fortnightly Tuesdays 7 p.m. Hagley High School.
Whangarei & Hamilton likely soon too.

MEMBERSHIP

The membership fee for the year 1/4/83 to 31/3/84 is $20. For new members there is a joining fee of $5 as well. They then receive ALL back-issues, including Jan, Feb & March. Auckland & Wellington have a further $5 levy to cover meeting costs. If you are interested in be-costs. Members are also issued with an ID card which doubles as a name tag at local meetings.

BBC MICROCOMPUTER USERS GROUP OF NZ
P.O. BOX 9592 WELLINGTON

Membership Application 1983 to 1984

Surname _____ 1st Name(s) _____

Address _____ Phone Res._____

_____ Phone Bus._____

_____

Occupation_____ School or Emplyer _____

I await a BBC/own serial #_____model B/A/Other_____

SCREEN type: TV/Other _____PRINTER (model) _____

DISC: Drive (single/dual). Capacity _____ Kbytes.

Other peripherals_____

Operating system 0.1/1.0/1.2 Can already program/am learning on the BBC

INTERESTS:
☐Business ☐Games ☐Education ☐Networking ☐Radio ham ☐Accounting ☐Word processor ☐Other _____

_____

☐Hobbies _____

I could help with:
☐Committee — local/national
☐Publicity
☐Newsletter
☐Software development — area:
☐Hardware development — area:
☐Talks on techniques — area:
☐Other:

I would like to see:
☐Software development — area: _____
☐Hardware development — area: _____
☐Talks on techniques — area: _____
☐Other: _____

I could be a contact point for other members in my area. (Only your first name and home phone no. would be passed on) Yes | No

☐I wish to join the BBC Microcomputer Users' Group of NZ (with entitlement to newsletter back issues Jan, Feb & March '83.

☐I wish to renew my membership of The BBC Microcomputers Users' Group of NZ.

Enclosed:
Auck & Wgtn $5 Branch levy $
Joining fee (new members only) $ 5.
Membership year ending 31/3/84 $20.00

Signed: Date: / /198

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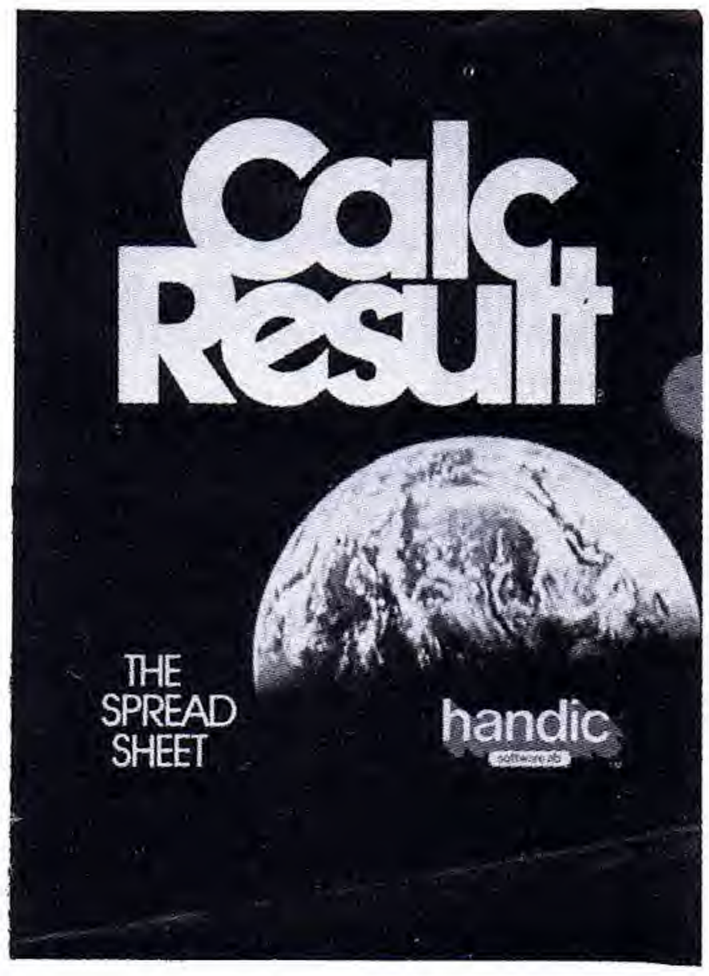
CalcResult



You're never alone with a clone, so they say, and Visicalc is certainly no exception to this rule.

Visicalc was the original spreadsheet program, appearing to an astonished world some years ago, and was probably the first program to prove that the Commodore PET could be taken seriously as a business computer.

The latest Son of Visicalc to appear, and perhaps the only one (so far that has been an improvement on the original, is a program called CalcResult, from the Swedish firm Handic Software.

GETTING STARTED

As usual, there is some kind of security device to go with the program, and although Handic choose to call it a cartridge, it is, to all intents and purposes, just another glorified dongle. Glorified because it also contains a fair amount of copying in its own right. Making copies of CalcResult is going to keep some pirates busy for quite a while!

Inserting the cartridge and switching everything on results in the message Insert Disk appearing on the screen, and from then until the usual spreadsheet format appears on the screen, you're totally in the hands of the computer.

So far so good, nothing too different yet. But, if you enter the User Register with the keystroke sequence Control-D-U (and try to find where that is in the manual!) you'll find an interesting display of names in eight languages! Simply select the one you want, from a choice ranging from Swedish to English, through many others en route, and all subsequent messages will be displayed in that language. By the way, in case you don't know, Suomeksi is Finnish! You can also, from this section, change the foreground, background and border colours if you want to, and select what type of printer you wish to use.

In terms of memory space, CalcResult soon shows itself to be far superior to the original Visicalc, purely because you've more memory to play with. Up to 1500 cells (or locations, the area in which you put your calculations or results) can be stored in memory at any one time, which should normally be enough for several pages of information to be entered. CalcResult always works in pages, and you can define up to 32 of them. A page can be as big or as small as you like, but your ultimate memory limit is always those 1500 cells.

Since the program makes extensive use of disk storage whilst in operation, you can use this as an active working storage area, and this effect gives you up to 5000 cells which you can control from within the main program.

Altogether, up to 32 pages can be defined, and any one of these can be called up at will without erasing the current work page. It was round about here that we encountered one of the faults of the manual.

It is excellent in presentation and appearance, but appears to have been translated from the original Swedish by someone whose knowledge of English was none too good, with the result that some of the paragraphs are a bit difficult to decipher. This is a serious criticism from the point of view of the first time user of the program, and is really the only flaw in the whole package. A shame that one small point should mar an otherwise excellent product.

However, if you have any doubts, you can always refer to one of the many Guides to Visicalc currently available, as the similarity to that program extends even to the use of the various command keystrokes to perform the same functions. You can, needless to say, read existing Visicalc files and modify them to take advantage of the extra facilities that CalcResult offers, and then re-save them.

VISICALC PLUS

In addition to the page facility mentioned earlier, CalcResult offers the user a number of other advantages over the existing Visicalc. Screen Splitting is more sophisticated, and you can have up to three different areas on display at the same time, all independently scrolling, etc., and the screen can be split either horizontally or vertically. You can also define a window in the middle of the screen, and operate on that page separately of the others.

Title columns, usually the most important part of the entire screen, can be wider than any others, instead of having to follow the same universal rules. All column widths are capable of being altered when you wish to print out the contents of the screen. And finally, calculations can be performed on combinations of rows and/or columns, instead of being restricted to just rows or columns.

The commands available are also a distinct improvement on Visicalc. The most powerful of these by far is the ability to include IF, THEN . . . ELSE structures, as well as AND, OR . . . NOT. You lose the lookup and choose functions, but do gain a random one, and a count one.

Finally, it has been made much more difficult to accidentally wipe out information from either the work area or the disk. Many ARE YOU SUREs appear, which can get irritating, but at least ensures that you won't lose the results of many hours hard labour.

CONCLUSION

Written entirely in Forth, although this is transparent to the user, CalcResult is as fast in operation as any spreadsheet program can be, and is a distinct improvement on the original program. Whether you think it is worth upgrading your existing system is, of course, up to you, but for anyone who has yet to buy a spreadsheet program, CalcResult certainly appears to be the best one currently available.

■

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CANDY BANDIT (T&F)
PAINT PIC (KIWI SOFT)

JUMPMAN (EPYX)
FROGGER (SIERRA ON-LINE)
JAW BREAKER (SIERRA ON-LINE)
FAST EDDIE (SIRIUS)
REPTON (SIRIUS)
SQUISH 'EM (SIRIUS)
SWORD OF FARGOAL (EPYX)
6502 DEVELOPMENT SYSTEM (HES)
TEMPLE OF APSHAI (EPYX)
UPPER REACHES (EPYX)
CURSE OF RA (EPYX)
CRUSH, CRUMBLE & CHOMP
PAKACUDA (COMMDATA)
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SUPERCUDA (COMMDATA)
PEGASUS ODYSSEY (COMMDATA)
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BOOK REVIEW

Computers for Everybody

Jerry Willis and Merl Miller.

"By the time you finish reading this page, you will be able to do something that 95 percent of the people on this plant can't do. You will be able to write a simple program, load it into a computer, and run it." Thus begins **Computers For Everybody,** by Jerry Willis and Merl Miller. And they deliver.

Out of the piles of fluff and nonsense that publishers are throwing at the newfound 'consumer' computer market, here is a genuine winner. This second edition (first published in 1981) is breezy and understandable to read. Sure, it takes you through bits, bytes and ASCII, but it never veers far from the mother tongue.

Willis and Miller lull you into unknown areas with their diminutive references: "a computer is nothing more than a box with plastic in it until someone tells it what to do." You can't help but feel reassured.

The book is organized in such a way that the reader can skip around the twelve chapters. In case you miss the definition of a word in one chapter, the excellent glossary brings you right back into the discussion. Without being partial to any particular brand, the authors suggest how to go about buying a personal computer, what to look for, and how to shop. As always, defining needs is at the top of the list. They include price ranges and service considerations and advise you to check any surveys available.

Later chapters deal with communications, educational uses, and business applications. A chapter on software likens a program to a recipe. And it's here you learn the origin of CP/M, the operating system that works across so many brands of computers.

Most of the above is accomplished without giving in to the technical ogre. As experienced guides, they keep their audience within earshot. It's not till Chapter Nine that Wills and Miller take you inside a computer. photos and simplified illustrations make it a pleasant journey.

A brief description of numerous personal computers follows, from Atari to IBM to Victor. The final two chapters discuss peripherals and sources of further information.

Did I like it? Sure did. It's a hot dog of a book: human, sincere, funny, and well done. About my only complaint is that it would never jump off the book racks at you. The style here is all in the words, not the cover or interior design. It looks like something more out of the fifties than the eighties. But that's not enough to dissuade me from giving it a high rating.

For the novice in the field, or your friends who seem to be jealously eyeing your PC, let them know about **Computers For Everybody.** They'll be gratefull.

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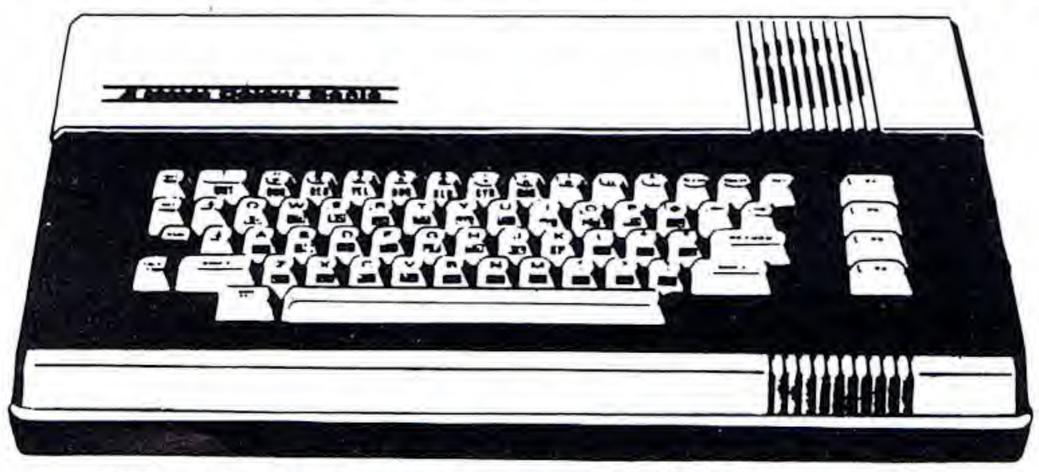

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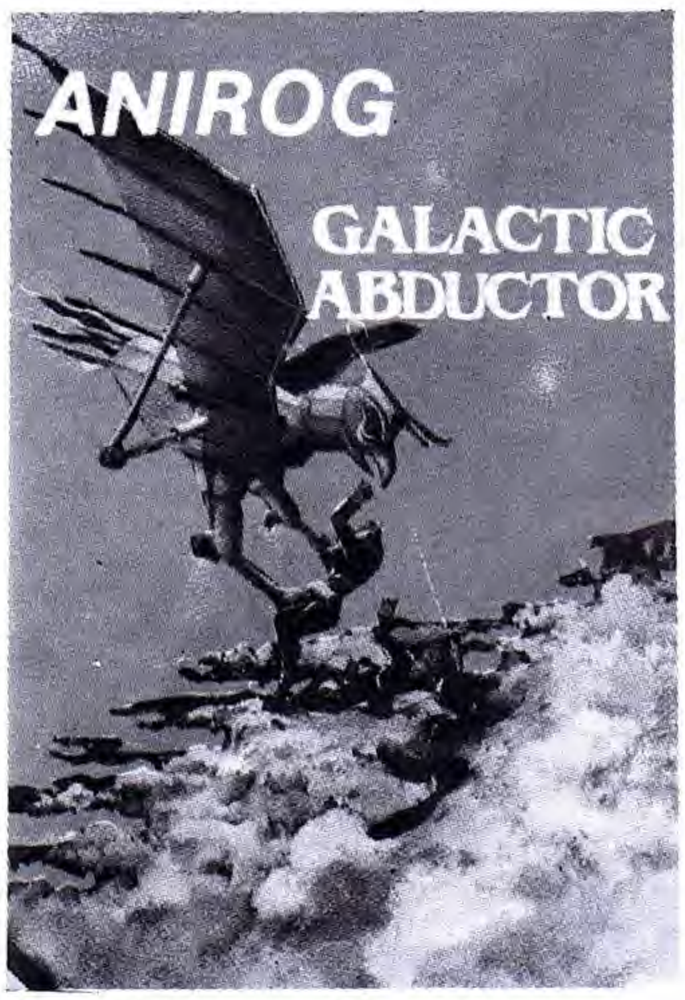
Sneak Previews

ANIROG SOFTWARE FOR SPECTRUM 16K/48K

Each month Computer Input reviews Software. Our Ratings are:

- **VISUAL:** Based on the use of graphics, colour, special effects, and special features.
- **SOUND:** Based on skillful sound effects, musical variation, and complexity of the notes used.
- **PROGRAM:** How well written, and how well it exploits computer capabilities.
- **DIFFICULTY:** Levels of skill required, degree of interest, and time to complete the game or each stage.
- **OVERALL:** We review programs of a wide price range, rating each on value for money, interest, and overall presentation.

*	**Hopeless**
**	**Sub-Standard**
***	**What we would expect**
****	**Very Good**
*****	**Exceptional**



GALACTIC ABDUCTOR

A high speed game with good graphics.

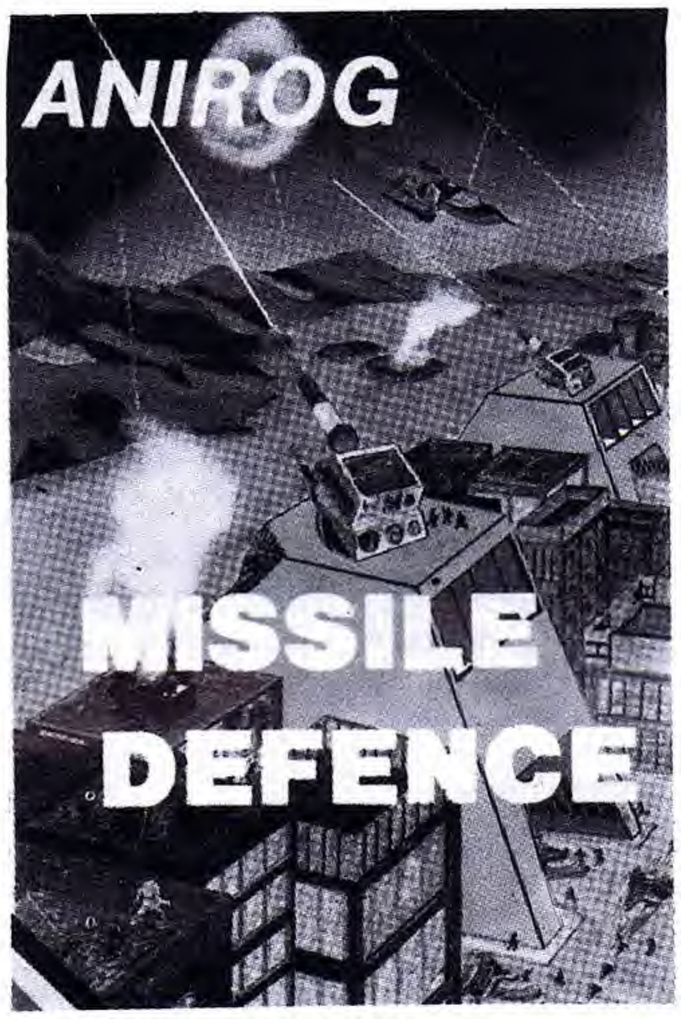
You are commander of a laser base on a planet surface a la Space Invaders . Humans are represented on another planet above and to the right of you.

You are to stop them from being abducted by swooping "space-hawks.

The space-hawks drop eggs at intervals, which hatch on contact with your planet, the contents of which then home in towards you. If a human is abducted, you must shoot the space-hawk and the human will be replaced on the above planet. Warning — to blast a space-hawk down — you must hit it twice!!!

Very good game with graphics and sound that are very much up to standard.

Visual	****
Sound	***
Programme	****
Difficulty	****
Overall	****



MISSILE DEFENCE

You are defending a city from attacking hordes of aliens. Your job, as the commander of three missile silos, is to blow anything and everything out of the sky, before the city is destroyed or your missile silos are emptied. The sky is literally full of missiles bearing down on your positions.

Should you show skill enough to deal with that lot, there's plenty more where they came from (ten levels in all).

The game itself is very good, however, with the 1, 2 and 3 keys being the prospective fire buttons for the silos and the 5, 6, 7 and 8 keys to move the target around, you tend to find yourself pressing the wrong buttons half the time. I understand the ZX interface 2 will soon be released in NZ allowing the use of 2 joysticks and eventually plug-in game cartridges. It will surely make this and many other games more playable, and may very well be a must for spectrum owners (depending on the price!!)

As I have said, this game is well worth the effort and outlay, especially with a joystick.

Visual	****
Sound	**
Programme	****
Difficulty	****
Overall	****

SLAP DAB

You are Sam, a painter — your mission — to paint a pre-defined area. Sounds easy? Well it would be, only trouble is, your pot of paint doesn't last long. You have to go back to the starting position to fill it up regularly. To make matters interesting, there are "wood worms" which are after you. Your advantage is that they can only travel on the areas you have painted.

A clean and simple twist on the usual maze game, and surprisingly addictive.

Visual	****
Sound	***
Programme	***
Difficulty	****
Overall	***

PAINTPIC™ — super art for the Commodore 64

Paintpic™ is a unique painting program for the Commodore 64. It allows you to draw and paint absolutely everything that is possible in a simple way. Those twin themes: as much as possible, and as easy as possible, were uppermost in the author's mind when he wrote Paintpic™. Also, the author to offer a tool to improve the quality of crude computer pictures.

Paintpic™ was designed to offer as much as possible. The author has worked as a software consultant for a large computer manufacturer and knew what is currently available for graphics on the large computers. He believed that the $10,000 graphics packages available for $100,000 computers could be just as readily done on a Commodore 64. The result of his efforts is Paintpic™, which offers about ninety percent of the graphics features of the $10,000 packages but is available for only $49

No other painting package is available offering similar capability. Other programs available for Apples and Atari and Vic 20 provide crayon drawing capability which can be fun and can even produce nice sketches. But none of these programs can produce oil-painting quality like Paintpic™.

- Joystick or keyboard control.
- Seven automatic shapes, plus tilt and filled figures and perspective.
- 65,000 brushes, 17 million brush stroke patterns, 8 brush widths, brush fill.
- Mirroring, rotation, halving, doubling, and copying anywhere on the screen.
- Any keyboard character or symbol can be put in your picture.
- Saving and loading of all or any parts of pictures.
- Nine HELP screens, and a 56-page step-by-step complete manual.
- Detailed instructions on putting your pictures into programs and games.

Paintpic™ not only was designed to provide $10,000 capabilities, it was designed to be very easy to use so that everyone from young children to grandparents would be able to create their own pictures. Paintpic™ provides eacy use in a range of ways. The "natural" keys are used wherever possible on the Commodore 64 for CRSR movements, CLR of the screen, and going to HOME positions. Commonly used keys are grouped together on the right of the keyboard so that all can be used conveniently to move and paint with one hand. A joystick is included for the very young and those who prefer to drive. Shape commands are the obvious letters like E for ellipse or T for triangle. Dangerous commands generally require two keys simultaneously and are kept away from the frequently used keys and can be cut off if you start them by mistake.

A 56-page user teaching manual is included to help teach the new computer user step-by-step how to get started using Paintpic™ and how to use every one of the many Paintpic™ features. Nine HELP menus in the program remind users of the ways to do things.

All of the features and ease of use and cheap price are there for one very good reason. The author would like to see the quality of computer pictures and graphics generally improve. Most game graphics provide crude stick figures against a background of boxes. Paintpic™ provides the tools for construction of characters and backgrounds which go beyond even the pictures in the ads.

The Paintpic™ manual contains specific help for people who want to put Paintpic™ pictures in their own programs and games. A listing of a BASIC program is included in the manual to show users how to load and display Paintpic™ pictures. The manual also includes a discussion of SPRITES and tells users how to use SPRITES with their Paintpic™ pictures.

Paintpic™ is not the last word in computer graphics. It is the first shot in a computer graphics revolution. Now at last users will be able to show the details which only existed in their

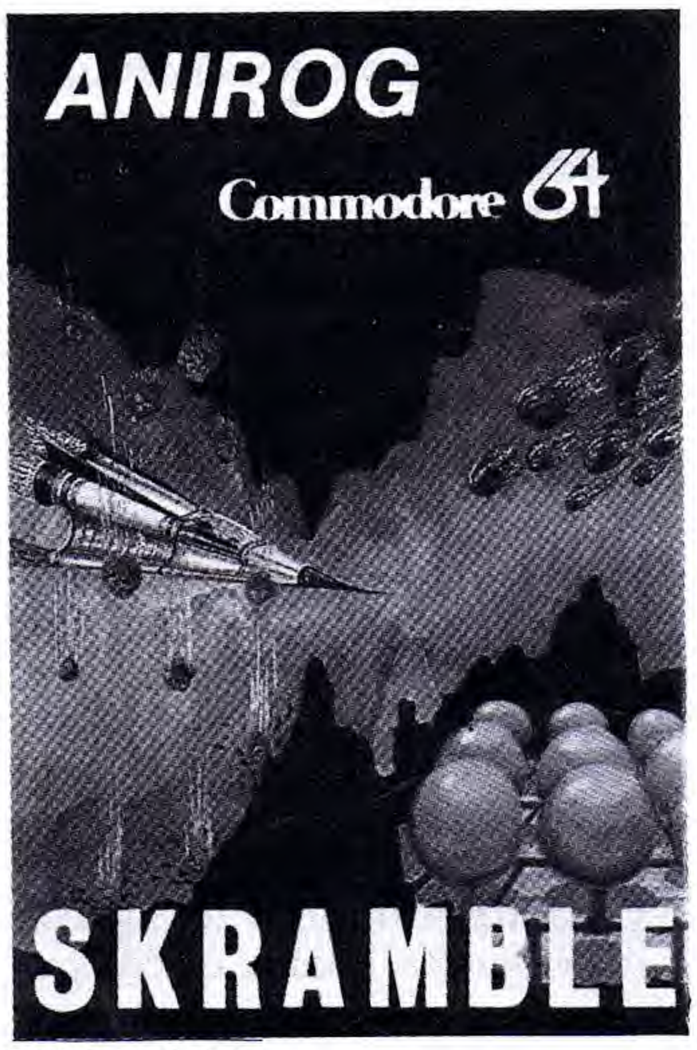
To page 47 ▷

SOFTWARE REVIEW

KONG

Kong has abducted the beautiful starlet Fay Ray and has trapped her in his lair. This all machine code program will provide thrills, fun and entertainment for the whole family. There are four screens. As soon as you finish one screen, Kong removes Fay Ray to the next level. You have to finish all four screens and destroy Kong's lair before you can rescue the beautiful lady and earn her undying love. All screens start with bonus points and a count down. If you do not reach the top by the time the count reaches zero, you lose a life.

Visual ****	**Programme** ****
Sound ***	**Difficulty** *****
	Overall ****



SKRAMBLE

This is one of the best examples of Skramble we have played. The graphics are superb. They have added sprites and sound with plenty of colour. For those of you who haven't played Skramble, the object is to manoeuver your space ship over a landscape covered with missiles, fuel dumps, etc. The space craft can fire lasers and drop bombs. You have to either avoid or shoot down the rockets, bomb the fuel tanks to increase your own fuel supply. As you progress from stage to stage, new challengers appear. You must negotiate an underground cavern fighting off UFOs, avoid a meteor storm and so on. When your space ship is destroyed, the graphic/sprite effect is excellent.

Visual ****	
Sound ****	
Programme ****	
Difficulty ***	
Overall ****	

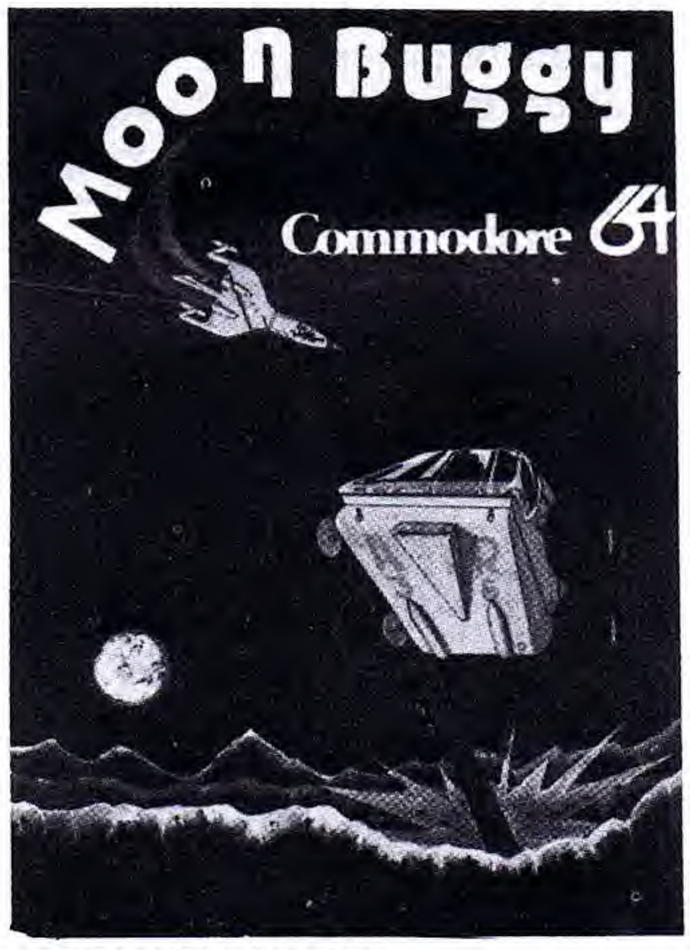
HEXPERT

Bert is a small, charming furry creature who used to live on a far-away planet. He was captured by an evil witch called Zogannar who forced him to play on her games pyramid. This three dimensional pyramid is constructed from hexagons. Bert has to change the top faces of all the hexagons to different colour by jumping from one face to another. Zoganaar throws rubber balls down the pyramid to crush Bert. Her pet snake Coily moves up and down the pyramid chasing him. He has two spinning discs on which he can jump to lure Coily to death.

When Bert has painted all the faces, the witch forces him to paint them a different colour but makes it more difficult for him to do. So can you turn Bert into an Hexpert?

This all machine code game with superb 3D graphics and the full use of sprite graphics.

Visual ***	**Programme** ***
Sound ***	**Difficulty** ****
	Overall ***



MOON BUGGGY.

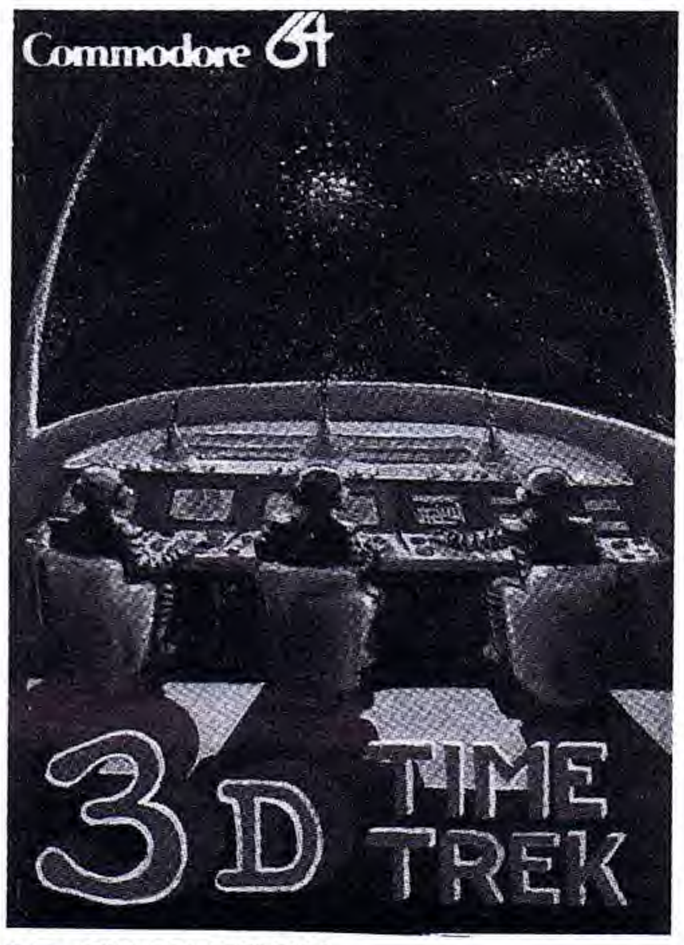
Patrol craft latest in a series of ATMB (All Terrain Moon Buggy) is out on routine patrol is heavily attacked by fighters operating from a star-cruiser. You must skillfully manoeuvre your ATMB over the lunar rocks, across the craters and destroy the alien attackers.

This all machine code program provides thrilling experience of driving across constantly changing landscape combined with fast and furious arcade action. Enormous fun for the whole family. Joystick only.

Visual ****	**Programme** ****
Sound ***	**Difficulty** *****
	Overall ****

COMMODORE 64 ANIROG SOFTWARE

SNEAK PREVIEW



3D TIME TREK

You are the only survivor of the planet Corillian. As your last act you have vowed to destroy all of those responsible for the destruction of your planet and rid the galaxy of the alien tyranny. Your mission is also a race against time, as you were wounded on the attack on your planet. Your starship, a prototype design, has many new features available to the pilot.

1. Battle Computer
2. Long-Range Sensors
3. Galaxy Map
4. Navigational Computer

Visual ****	**Programme** ****
Sound ****	**Difficulty** ****
	Overall ****

FROG RUN.

In this game you have to get five frogs from the bottom of the screen to their frog-holes at the top.

Unfortunately, this is not all that easy, because first you have to dodge the fast moving cars and lorries on the freeway, then the hungry frog-eating snakes on the rivver banks and then you must hop on the logs, crocodiles' tails and turtules to get to the frog holes.

Visual ***	**Programme** ***
Sound ***	**Difficulty** ***
	Overall ***

COMPETITION PAGE

Our New Subscribers' competition continues this month for the prize of a

Sega SC-3000 Home Computer

Should anyone spot a mistake in a program listing printed in **Computer Input** (one that will stop the program running as it should) and be the **first** to tell us about it, then they will be $10 richer. Simple.

Complete the following sentence:—

"COMPUTER INPUT MAGAZINE IS

.....

(Note: Entries will be accepted with subscription)

PROGRAM OF THE MONTH

Each month a **Program of the Month** will be chosen from those received that month. This puts the author in the running for **Program of the Year**, the overall prize for which is yet to be announced (and guaranteed to be worthwhile).

Each program will be judged on graphics, sound, setting out, playing levels and so on. Obviously the computer used will be taken into account.

THIS MONTH

A maze game (preferably graphic). That's it. Simple (we don't want to overtax you over Christmas).

Be in to win a software package!

PROGRAME OF THE MONTH

Goes to Peter McCarroll of Lower Hutt for his "Chat" program for the 16K ZX81 (mainly because it was the only one we received in time to go in the second issue). It puts you in the running for "Program of the Year," Peter, which will be a computer. We haven't decided which one yet, because the way things are going with home computers, this year's top models are next year's bookends.

FOR EXISTING SUBSCRIBERS ONLY

There are 2 **Computer Input** sweat shirts to be won (please send chest size, just in case you win).

All you have to do is tell us what you would like to see on a **Computer Input** tee-shirt (keep it clean!!). Send as many entries as you like. The more the merrier! We will pick the one we think is the best and a runner-up as the two winners.

BRAIN TEASER

The winner of last month's Brain Teaser was Daniel travers of Waihi Beach (for program see "Software Input"). Well done, Daniel. The program was written on his school's Pet, but Daniel owns a VIC 20. Software on the way to you Daniel.

As usual the address is:

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From page 45

imagination and in the ads, using a universal painting and drawing tool.

You can save your Paintpic™ pictures to cassette or to disk — what better present for a friend than a picture painted by you, a Paintpic™ picture cassette for Christmas.

The author of Paintpic™, Harold T. Savlie, first began programming in 1964 at the University of Michigan while working on his doctorate in Psychology. Computer programming remained both a hobby and an interest from then on. In 1972 Harold completed his Ph.D. and joined the Department of Psychiatry at the University of Auckland Medical School. He married a New Zealander and has settled in Auckland.

In addition to lecturing, Harold did research on a PDP8 and constructed games for his patients (children) to use as part of their therapy. In 1976 he left the medical school to join Digital Equipment Corporation in New Zealand. In 1983 Harold quit his job as Software Consultant for Digital in order to devote himself fulltime to software production for the Commodore 64.

Paintpic™ is the first main product of Kiwisoft Programs. It is being marketed in Australia, the US and Europe.

NEXT MONTH

Due to the intervention of Christmas, our next issue will be on the bookstands in the first week of **February**, with more page, more content, more colour, and more of that all-important advertisers' information.

Tom Cherrie's **Overseas Input** column continues as a regular feature, bringing the latest from London, with trends & gossip gleaned from the world's grapevine.

Olwen William's **Genie Input** brings more data to owners of the Genie system, being the second in a series planned to run for the next few months.

More new arrivals will be reviewed on both hardware and software scenes, with final choice still being decided at time of going to press.

A **Buy/Sell/Swap** page will be pioneered . . . more on this in the next issue.

Mail Order, Books, Reviews & Previews are all planned through next year's issues, and as publication demand increases, so will the capability for ever-expanding content.

COMPUTER INPUT

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